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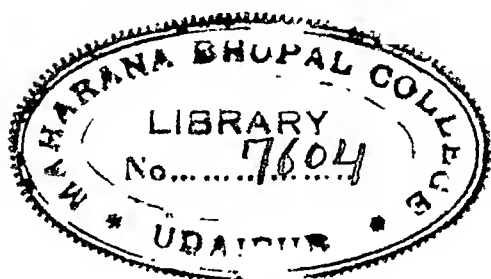
Book No.....

MONEY AND BANKING IN THE UNITED STATES

BY

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INTRODUCTION

THE rapid developments of the past few years in the financial world and in the sphere of governmental policy require that the problems of money and banking be restated and given new study in the light of recent experience. The banking structure of many countries, and particularly that of the United States, is undergoing extensive reorganization. The character of our monetary system has likewise been transformed. Both the monetary system and the banking institutions of the country have become the instruments of a governmental policy which has far-reaching purposes. In consequence this field of study has taken on new importance, not only to the expert, but to everyone who seeks to understand the nature and functions of our social institutions.

It is inevitable in existing circumstances that popular interest should be focused upon the novel features of our revised systems of money and banking and upon the more unconventional phases of the Government's policy. These modern problems cannot be understood, however, without preliminary and thorough study of fundamentals. The bank as a social institution continues to discharge the functions which it has acquired through a long process of evolution. Money is still governed by economic laws of long standing. These basic factors have not lost their significance, but, on the contrary, have become of increased importance in the setting of the modern world.

Professor Rufener has prepared a book which brings a thorough knowledge of the essentials of banking organization and practice and a clear exposition of monetary principles to bear on present-day problems. An important feature of the book is its illuminating analysis of the history of our financial institutions. Since most of the experiments under way or proposed at the present time have been tried out in the course of banking history, the lessons to be learned from the past are of timely and practical importance. Professor Rufener, while bringing his data completely abreast of the times, has taken pains to emphasize the aspects of his subject which are of permanent significance in the field of money and banking. As a result of his skillful exposition his book serves well the double purpose of giving the student a thorough grounding in fundamentals and at the same time equipping him to understand and appraise the problems and policies of our own day.

E. S. FURNISS

PREFACE

THIS book represents not an effort to squeeze a somewhat attenuated Encyclopedia of Money and Banking in between the covers of a volume of moderate size, but rather an attempt to give fairly adequate answers to such questions as the following, which might reasonably have been asked by millions of American citizens on or about July 1, 1934:

What is the significance of our federal banking and currency legislation of 1933 and 1934? Will it correct the evils against which it is directed, or merely bring new evils upon us? What have been the fundamental defects of our banking and currency system? Why did more than a third of our thirty thousand banks fail in the dozen years following 1920? Why did our banking system collapse utterly in 1933, and why did our Government abandon the gold standard? What is one to believe in respect to the relative merits of a gold standard, a bimetallic standard, or a multiple standard of value? What can be gained or lost by changing the mint price of gold, prohibiting the free export and private ownership of gold, or manipulating the foreign exchange value of the dollar? What is the relation between the banking and currency system and periods of prosperity and depression?

Such questions as these cannot be adequately answered by placing before the reader merely a detailed description of our financial institutions as they stood before the crash together with a chronological summary of our banking and currency legislation from 1791 to 1933, nor by subjecting him to a ponderous and arid dissertation on the abstract principles of money and banking. A reader unmercifully assailed with all these facts, historical events, and fundamental principles is more likely to be dazed than enlightened. How, then, are these questions to be answered? The writer believes that the answers will be found in a critical discussion of the principles of money and banking in the light of their application in the developing banking and currency system of the United States throughout our national history.

With the aid of the historical approach the reader is given, not merely a flat, still picture of the present system, but rather a moving picture in the nature of a stereoscopic view — with depth as well as merely superficial dimensions. In this picture he may see in operation the banking and currency machinery based upon the laws. If, then, with the prompt-

ing of the author, the reader keeps in mind the principles of money and banking, he should understand pretty well the relation of the different parts of the picture to one another and the significance of the whole. He should be able to draw conclusions on how the system has worked in practice and whether the laws have been based upon sound principles and the operations of the banking and currency system have been in accord with the laws. He should observe that our past experience may throw light on our problems of today. The reader may be impressed, for example, by the fact that the bimetallic controversy has run throughout our national history, and did not enter merely, and somewhat surreptitiously, in the Inflation Bill of 1933. More broadly speaking, he may observe that practically all of our banking and currency legislation has grown out of a desire to correct real or imaginary defects in previously existing laws. Most of these laws are not independent acts, but rather in the nature of amendments to prior acts of Congress. There is, consequently, no logical point to begin the discussion except at the beginning, with the first banking and currency acts under the Constitution. And, in fact, properly to understand the meaning of these early acts of Congress, we must make some brief observations on banking and currency conditions in the United States and the colonies in the days before the Constitution.

In writing a book on money and banking which is not to be encyclopedic in scope, the author must face the problem of what to exclude. Without defeating the primary purpose of this book, it has been found possible to omit detailed descriptions of all financial institutions not directly concerned with currency problems—that is, all except commercial and central banks and those bureaus of the United States Treasury Department concerned with coinage and currency. With savings banks, investment banks, insurance companies, and building and loan associations we are not concerned except in a minor way; they issue no bank notes and create no deposit currency. A single chapter is sufficient to indicate their importance and their relation to our monetary system. As for the commercial banks themselves, we are not deeply concerned with their internal mechanism—their departmental organization, their bookkeeping and their problems of personnel. These represent problems of banking practice. Our task is to understand their relation to one another, to the Government, and to the general public. Our interest lies in questions of banking theory and public policy.

LOUIS A. RUFENER

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economic system of the country has functioned efficiently and smoothly. Among the factors which have contributed to this result, an important place must be assigned to the operation of our credit system and notably to the steadying influence and moderating policies of the Federal Reserve System.

There seemed to be sound reason to hope that the period of prosperity then entering its seventh year would continue and that new high levels of economic achievement would be recorded by the United States. The very fact that prosperity had been prolonged for the unusual period of six years without a serious break had inspired confidence in its continuation. At no time in our history had the majority of our business leaders faced the future more optimistically.

There were, however, some grounds of apprehension — some sore spots in the economic organism. Agriculture had not shared in the great prosperity, and there was economic distress, and consequently political unrest, in the West and South. And on the security markets the great prosperity and high earnings of the corporations had become the occasion for rampant speculation, involving, as it seemed to some, an unduly large proportion of bank credit and the possibility of a dangerous financial collapse. The Federal Reserve Board had in recent months become somewhat disturbed at the amount of bank credit absorbed in speculative activities and had sent words of warning on the subject to the reserve banks. Others in high authority, however, had expressed the opinion that the funds employed in speculation were not excessive and represented merely a normal amount with relation to the degree of prosperity and the great value of the securities dealt in. Another cause of uneasiness was the abnormally large number of bank failures year after year throughout the period of prosperity. The total number of bank failures from 1921 to 1928 inclusive was 5000, or approximately one sixth of all the commercial banks in the country at the beginning of the period. Since, however, most of these banks were small banks organized with inadequate capital and were not members of the Federal Reserve System, it was believed in many quarters that their disappearance from the scene actually strengthened the banking system and made the financial position of the country more secure.

While the pessimists, as usual, were not so happy at the prospect as were the optimists, not even the Cassandras among the pessimists could visualize so many woes ahead that they would have hazarded the prediction early in 1929 that during the next four years the following events would occur:

The stock market would suffer the most disastrous collapse in its history, wiping out more than eighty per cent of the market value of all

the stocks listed on the New York Stock Exchange. The market price of bonds would sink to such low levels that the solvency of the strongest banks and insurance companies would be imperiled. Industrial activity would decline until more than a fourth of all our able-bodied workers would be unemployed and millions of persons would be forced to subsist on charity or starve. Railroad traffic and revenue would decline so disastrously that only government loans would save the great railroad systems from bankruptcy. Commodity prices would fall so sharply that wheat in Kansas would sell for twenty cents a bushel, corn in Nebraska for ten cents a bushel, oats in Iowa at a price so low that it would not cover the cost of harvesting the grain, and corn would once more be used as fuel in the Middle West as in the hard times of the nineties. Farmers would be driven by these desperately low prices to open rebellion and would resist with violence public officials engaged in enforcing the law. Bank failures would increase in numbers and would involve some of the largest banks in the country. Other large banks would be saved from failure only by enormous government loans, and the banks would finally all be closed by a Presidential proclamation as a desperate device to save them from universal suspension and complete ruin. The gold standard would be abandoned by the United States Government, the President would be given dictatorial powers by Congress to establish a new monetary system differing perhaps quite radically from the old, and Congress would amend the banking laws, effecting radical changes in the conditions of bank-note issue, the extension of bank credit, and the relation of the banks to one another and to their depositors.

Preposterous as such a prediction would have seemed if it had been made in the prosperous early months of 1929, all of the events named had happened before the end of June, 1933. Never in history had such a cataclysmic change in economic conditions occurred — a country of 120,000,000 people plunged in a period of less than four years from the heights of unparalleled prosperity into the depths of an unprecedented depression.

2. CAUSES OF THE ECONOMIC DISASTER

When the financial chaos had become complete and the country was faced with the task of building a new financial structure from the wreckage and amid the ruins of the old, there was general agreement that the economic disaster was the most appalling in the nation's history, but there was no general agreement as to the causes of the disaster nor the means which should be employed to restore prosperity. A multi-

plicity of causes seemed to have conspired to bring about our economic downfall. Excessive speculation in land and securities, artificial price-fixing schemes by governments and private monopolies, international trade barriers, betrayal of trust by great financiers, public and private extravagance involving the expenditure of more than current income of governments and the people and the contraction of huge burdens of public and private debts — all these were doubtless important contributory causes of the disaster that befell the people of the United States. Whatever the relative importance of these various factors may have been, of one thing there can be no doubt: If our banking system as a whole had been sound and well administered and if the banks individually had been operating in accordance with sound banking theory, no such complete collapse would have been possible, however potent the other forces of economic and financial destruction had been. In so far as the forces of disaster were domestic in origin, they can be traced in large part to defects and mismanagement of our banking system. Moreover, in so far as they were of foreign origin, they can be traced in large measure to mismanagement in currency and banking systems of foreign governments during and after the World War.

The question may then be raised, What was the nature of the defects in our banking system, and on what grounds may one charge that our banking system and the currency and banking systems of foreign nations had been mismanaged? An after-luncheon speaker might attempt to answer this question in a twenty-minute talk, but such an answer would be superficial and hardly worth the breath expended in delivering it. A solid answer involves no less than an exposition of the fundamental principles of money and banking — a task far too long and complicated for a twenty-minute intellectual-labor-saving talk, but one that can be properly performed only by writing a book. The task will be performed the better if the principles of money and banking are discussed, not merely in the abstract, as may be the principles of mathematics, but in the light of their application in the development of the currency and banking system of the United States.

3. OUR VARIOUS KINDS OF MONEY

It will be convenient to begin our discussion of the monetary system of the United States with a brief description of the various kinds of money in circulation before the suspension of the gold standard in 1933. Since conditions were highly abnormal for some time before that date, it will be better to choose an earlier year than 1932 — the prosperous year 1929 will do as well as any. On page 6 is reproduced the Circular-

tion Statement of United States Money for February 28, 1929, issued by the United States Treasury Department. The statement can hardly be said to be self-explanatory to the uninitiated, even though footnotes are appended, and it must be carefully studied if it is to be understood.

First of all may be noted that the statement lists no less than eleven different kinds of money in circulation. These include four kinds of metallic money, namely, gold coin and bullion, standard silver dollars, subsidiary silver, and minor coins; four kinds of government paper money, namely, gold certificates, silver certificates, treasury notes of 1890, and United States notes; and three kinds of bank notes — federal reserve notes, federal reserve bank notes, and national bank notes. Some of these different kinds of money had been in use ever since the establishment of our monetary system by the Coinage Act of 1792; others had come into use by later acts of Congress, the newest having been the federal reserve notes and federal reserve bank notes provided for by the Federal Reserve Act of 1913. All remained in use until 1933, and all of them except gold coin and gold certificates will presumably continue to circulate after the coinage and currency legislation of 1933 and 1934 has gone into effect, but in some cases the conditions under which they are issued will be altered. The following comments on these various kinds of money apply to the conditions and the laws under which they were issued in 1929, and not all of them are applicable to conditions at the present time. Developments after 1929 will be considered in detail in later chapters.

4. OUR GOLD MONEY

All our metallic money is coined by the Federal Government under the supervision of the Director of the Mint. In 1929 gold was coined in four denominations, namely, in \$2.50, \$5, \$10, and \$20 pieces, the four coins being named officially the quarter-eagle, the half-eagle, the eagle, and the double eagle. Formerly a \$1 piece and a \$3 piece had been coined, but both were discontinued in 1890, the first because it was too small for convenient use and was often confused with the silver dime, and the second because it served no purpose important enough to justify the extra mint expense of coining it. In 1930 the quarter-eagle was also discontinued in the interest of economy at the mint. Since the establishment of the mint approximately three fourths of all the gold coined has been coined into \$20 pieces, and since the World War, when gold coins largely went out of circulation, not to return, only insignificant quantities of smaller gold coins have been minted. Occasionally coins not regularly struck have been issued for commemorative purposes;

CIRCULATION STATEMENT OF UNITED STATES MONEY — FEBRUARY 28, 1929

CIRCULATION STATEMENT OF UNITED STATES MONEY — FEBRUARY 28, 1929											
Kind of Money	Total amount.	MONEY HELD IN THE TREASURY					MONEY OUTSIDE OF THE TREASURY				Population of continental United States (estimated)
		Total	Amt. held in trust against gold and silver certificates (and treasury notes of 1890)	Reserve against United States notes (and treasury notes of 1890)	Held for federal reserve banks and agents	All other money	Total	Held by federal reserve banks and agents	In circulation		
									Amount	Per capita	
Gold coin and bullion.....	\$ 4,153,430,098	\$ 3,210,329,420	\$ 1,379,370,309	\$ 156,039,088	\$ 1,511,764,857	\$ 100,150,172	\$ 013,107,272	\$ 595,594,993	\$ 377,512,279	\$ 3.17	
Gold certificates.....	1,376,376,309	482,495,814	407,000,434	.....	.....	.....	1,370,370,309	440,928,050	035,448,259	7.84
Stan. silver dollars.....	539,091,773	.....	.....	.....	.....	15,486,380	57,495,991	13,390,024	44,076,337	3.37
Silver certificates.....	(465,718,434)	.....	.....	.....	.....	.....	495,718,434	80,329,257	385,389,177	3.23
Treasury notes of 1890.....	(1,291,000)	.....	.....	.....	.....	.....	1,291,000	.....	1,291,000	.01
Subsidiary silver.....	393,941,464	2,325,553	.....	.....	.....	2,325,553	301,015,911	20,880,063	280,735,848	2.35
Minor.....	118,937,714	1,468,281	.....	.....	.....	1,468,281	117,519,433	3,827,299	113,692,107	.05
U.S. notes.....	340,981,010	3,248,939	.....	.....	.....	3,248,939	343,432,380	59,828,900	283,003,411	2.38
F.R. notes.....	2,059,164,465	943,105	.....	.....	.....	943,105	2,058,221,300	411,098,240	1,949,523,111	13.80
F.R. bank notes.....	3,882,751	123,081	.....	.....	.....	123,081	3,759,670	12,387	3,747,283	.03
Nat. bank notes.....	991,883,330	19,320,089	.....	.....	.....	19,320,089	975,554,250	49,299,802	620,314,448	5.25
Total Feb. 28 '29.....	8,290,939,222	43,720,202,985	18,133,385,743	156,039,088	1,511,764,857	209,083,297	9,314,061,980	1,045,099,057	4,998,392,323	39.38	
Comparative totals.....	8,211,932,901	43,694,997,187	18,400,874,420	150,039,088	1,484,593,458	204,490,221	9,360,860,134	1,710,242,710	4,056,017,424	39.07	
Jan. 31 1929.....	8,360,797,017	44,021,293,299	18,404,013,418	150,039,088	1,030,578,511	100,902,252	9,383,518,060	1,993,087,090	4,000,430,100	30.70	
Feb. 29 1928.....	8,479,920,824	42,436,864,530	17,879,374,378	152,979,029	1,212,390,791	352,850,336	9,761,430,972	1,063,210,060	5,998,219,012	53.01	
Oct. 31 1920.....	5,399,596,977	42,952,020,313	2,981,991,972	152,070,026	1,173,350,210	117,350,210	5,126,207,430	653,321,522	1,172,015,014	40.23	
Mar. 31 1917.....	3,799,459,764	41,845,575,888	1,567,178,879	150,000,000	.....	183,997,009	3,458,059,755	.....	3,458,059,755	34.92
June 30 1914.....	1,007,084,483	42,212,420,402	21,002,640	100,000,000	.....	90,817,792	810,299,721	.....	810,299,721	10.92
Jan. 1 1870.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
The money held by the Federal Reserve Bank of Atlanta, and the amount held by the Cuban agency of the Federal Reserve Bank of Atlanta, are included in the federal reserve agents. Gold held by federal reserve banks.											

a Includes United States paper currency in circulation in foreign countries and the amount held by the Cuban agency of the Federal Reserve Bank of Atlanta.

b Does not include gold bullion or foreign coin other than that held by the Treasury, federal reserve banks, and federal reserve agents. Gold held by federal reserve banks and under earmark for foreign account is excluded, and gold held abroad for federal reserve banks is included.

c These amounts are not included in the total, since the money held in trust against gold and silver certificates and treasury notes of 1890 should be deducted from this total before combining it with total money bullion and standard silver held in trust against gold and silver certificates and treasury notes of 1890.

d The amount of money to arrive at the stock of money in the United States.

e This total includes \$10,502,480 of notes in process of redemption, \$157,034,531 of gold deposited for redemption of federal reserve notes, \$6,715,188 deposited for redemption of national bank notes, \$2,050 deposited for retirement of additional circulation (Act of May 30, 1908), and \$7,531,250 deposited as a reserve against postal savings deposits.

f Includes money held by the Cuban agency of the Federal Reserve Bank of Atlanta.

See Note at foot of page 7.

for example, the \$50 round and octagonal Panama-Pacific International Exposition gold coins of 1915 and the Louisiana Purchase Exposition \$1 pieces of 1902. Such coins are sought after by coin collectors and tend to be valued above their face value.

In 1929 the gold dollar, although no longer coined, was nevertheless our unit, or standard of value, and if minted under the existing laws would have contained 25.8 grains of standard gold. Standard gold is 90 per cent pure, or, as it is commonly expressed, nine tenths fine, consisting of nine parts of gold to one part of copper. Since 90 per cent of 25.8 is 23.22, our unit of value, the gold dollar, contained 23.22 grains of pure gold. It should be emphasized that this unit of value was a definite quantity of gold of a definite degree of fineness, rather than merely a coin; 23.22 grains of pure gold, or 25.8 grains of standard gold was a dollar just as truly as a one-dollar gold coin. Nothing of value was added to the gold by the government stamp. The government stamp merely attested the weight and purity of the gold in the coin. When gold is used in small cash transactions, it can be used most conveniently in the form of coin, but when handled in large amounts, as when exported by dealers in foreign exchange to settle international trade balances, it is sometimes preferred in the form of sizable gold bars, with the weight and purity guaranteed by a stamp. Such a bar, if made of standard gold, would be worth its weight in gold coins.

The gold coins were made to contain, as nearly as the mechanical perfection of the mint permitted, 23.22 grains of pure gold to the dollar. They were not made of pure gold for two reasons; first, it is difficult to refine gold to the point where all impurities are removed, and second, an alloy of nine parts of gold to one part of copper is harder and makes a more durable coin than practically pure gold.

5. FREE COINAGE OF GOLD

In 1929 we had free coinage of gold, as in fact we had had ever since the establishment of the mint in 1792. Free coinage of gold implies

Note. — Gold certificates are secured dollar for dollar by gold held in the Treasury for their redemption; silver certificates are secured dollar for dollar by standard silver dollars held in the Treasury for their redemption; United States notes are secured by a gold reserve of \$150,030,088 held in the Treasury. This reserve fund may also be used for the redemption of treasury notes of 1890, which are also secured dollar for dollar by standard silver dollars held in the Treasury. Federal reserve notes are secured dollar for dollar by standard silver dollars held in the Treasury. Federal reserve bank obligations of the United States and a first lien on all the assets of the Federal Reserve Bank. Federal reserve notes are secured by the deposit with federal reserve agents of a like amount of gold or of gold and such discounted or purchased paper as is eligible under the terms of the Federal Reserve Act. Federal reserve banks must maintain a gold reserve of at least forty per cent, including the gold redemption fund which must be deposited with the United States Treasurer, against federal reserve notes in actual circulation. Lawful money has been deposited with the Treasurer of the United States for their retirement. A five per cent fund is also maintained in lawful money with the Treasurer of the United States for the redemption of national bank notes secured by government bonds.

that the Government, which has a monopoly of coinage, will coin gold in unlimited quantities for anyone who presents it at the mint for that purpose. A slight distinction is made between coinage which is merely free and coinage which is both free and gratuitous. When coinage is merely free, the Government will coin unlimited quantities of the metal for anyone, but will make a small charge to cover the actual cost of coinage. When coinage is gratuitous as well as free, no charge is made for coinage at the mint. The practice of our Government has been to make no charge for actual coinage, but to make a small charge to cover the expense of refining and of supplying the alloy when other than standard gold has been presented for coinage. This has meant that anyone who brought standard gold bullion to the mint would receive in exchange, without cost, an equal weight of gold coins. When the gold was coined into dollars at the rate of 25.8 grains of standard gold, or 23.22 grains of pure gold, an ounce of standard gold yielded \$18.60, and an ounce of pure gold, \$20.67. In effect the mint paid \$18.60 an ounce for standard gold and \$20.67 an ounce for pure gold, and this was known as the mint price of gold. The person who brought the gold to the mint for coinage might, of course, accept in payment other kinds of money, but the essence of free coinage is that he could demand gold coins for his gold.

When standard gold bullion may be exchanged at the mint for an equal weight of gold coins, and when the gold coins may without penalty of the law be melted down into bullion or exported without restriction, there cannot be more than a very small difference between the value of an ounce of gold bullion and an ounce of gold coins.

6. STANDARD MONEY AND LEGAL TENDER

This equality between the face value of money and the material out of which it is made is extremely important. In 1929 gold money was the only one of the eleven kinds of money in circulation in the United States which met this test. The silver dollar, the subsidiary silver, and the minor coins were all made of metal worth much less than the face value of the coins, and the paper money of all kinds represented of course mere promises of the Government or of the banks to pay. For the banks this promise to pay meant to pay in gold or other lawful money, including silver dollars and United States notes; for the Government the promise meant to redeem in gold, and this applied not only to the government paper money, but also to the metallic coins other than gold. Gold was, in fact, our only real standard money, the value of which determined the value of all our other kinds of money. In the

last analysis, it was only the free interchangeability of gold and the other kinds of money which maintained the latter at its face value. It should be added, however, that this free interchangeability could not have been maintained if there had been no restrictions placed upon the issue of the other kinds of money, concerning which more will be said later.

Gold, our standard money, had full legal-tender power. Money, is said to have full legal-tender power, or to be full legal tender, when the law requires that it be accepted without limit in payment of any debt expressed merely in terms of the country's monetary unit, as the dollar, and not in specified money other than the standard money. This does not mean that the debtor is freed from his obligation to pay if his tender of the standard money is refused, but it does mean that he cannot be compelled legally to pay in any other form of money and cannot be held liable for interest charges or other expenses growing out of the collection of the debt after the tender has once been made. For most practical purposes, however, the legal-tender power conferred upon any kind of money makes its acceptance in payment for debts compulsory. This is a matter of no particular significance when the bullion content of the money is equal in value to the face value, but it may be a matter of great significance when the material from which the money is made is worth less than the face value of the money.

7. COINAGE ON GOVERNMENT ACCOUNT

In 1929, as had been the case for many years, our silver, nickel, and copper money was not subject to free coinage, but coined only on government account. That is to say, the mint did not stand ready to coin into money all the silver, nickel, and copper presented for coinage and return to the owners thereof an amount of coin in each case equal in weight to the bullion presented, but on the contrary the mint purchased in the open market as much of such metals as was needed to meet the requirements of the people for small change.

The silver dollar had a peculiar status resulting from its earlier legal history, concerning which more will be said in later chapters. Here we will note only that it was endowed with full legal-tender powers, but, not being freely coined, its legal-tender powers had no real significance. Because silver dollars had been coined in superfluous quantities under earlier laws, none were being currently coined in 1929. Those which had been coined were made of standard silver consisting of nine parts of silver to one part of copper, and contained 412.5 grains of standard silver, or 371.25 grains of pure silver. The subsidiary silver coins contained the smaller amount of silver to the dollar of 385.8 grains of

standard silver or 347.22 grains of pure silver. In due course will be considered the reason for this difference in weights.

The subsidiary silver coins — that is, the half-dollars, quarter-dollars, and dimes — were legal tender only to the amount of ten dollars. Whether or not these small coins were full legal tender was a matter of small importance so long as they remained freely redeemable in gold, since in that case the debtor would have no great cause for forcing them upon the creditor in payment of debt, and the creditor would have no great cause for refusing to accept them in payment. Nothing more serious would be involved than the cost of transporting the undesired coins to the Treasury, where they could be exchanged for their face value in gold, or other money.

When silver is coined into dollars at the rate of 371.25 grains of pure silver to the dollar, as in the case of the standard silver dollar, one ounce of silver yields \$1.29 in coin, and when it is coined into subsidiary silver coins at the rate of 347.22 grains to the dollar, it yields \$1.38 in coin. But in 1929 the average market price of silver was less than 54 cents an ounce, and later the price fell even lower, sinking below 25 cents an ounce at one time in 1932. Obviously, if silver had been subject to free coinage, as gold was at the time, there could not have been this great difference between the value of an ounce of silver bullion and an ounce of silver coins. If the free coinage of silver into dollars of full legal-tender powers had been unrestricted, the market price of silver could not have been less than the mint price of silver, although, as we shall see later, it might have been more, in which case the bullion would not have been delivered to the mint for coinage.

With the market price of silver far below the face value of coins made from the silver that the Government bought for the mint, it is obvious that the process of coinage yielded the Government a handsome profit. It could, for example, make a million dollars in silver coins out of silver purchased for less than half that sum, and either use this money in paying government expenses or exchange it for other kinds of money. The Government made even a larger relative profit from the coinage of the minor coins, the five-cent piece or nickel, and the one-cent piece sometimes called the copper.

The nickel, so called because it is commonly believed to be made of nickel, is in reality made of an alloy containing 75 per cent of copper and only 25 per cent of nickel. The cent is made of bronze rather than of copper, the composition being 95 per cent copper and 5 per cent tin and zinc. Obviously, with copper worth only a few cents a pound the bullion content of the minor coins is only a small fraction of their face value.

When a government makes a large profit from coinage by converting a given value in bullion into a much larger value in coin, this profit is called "seigniorage," a term which came into use centuries ago when European rulers, or seigniors, made a practice of retaining for themselves a part of the bullion presented to them by private individuals for coinage. Seigniorage is to be distinguished from the small charge, properly termed "brassage," which may be made at the mint to cover cost of labor and materials used as alloys. According to the figures given in the *Annual Report* of the Director of the Mint for 1928, a fairly normal year, the seigniorage on the bronze coins struck during that fiscal year was 87 per cent of their face value, and the seigniorage on the nickel coins 86 per cent of their face value. The total income accruing to the Treasury in the form of seigniorage from the operation of the mint during the year was approximately \$6,000,000, whereas the total expenses of the mint amounted to only \$1,682,260.

8. GOVERNMENT PAPER MONEY

Of the four kinds of government paper money in circulation listed in the *Treasury Statement* of February 28, 1929, only three were in common circulation, namely, the gold certificates, the silver certificates, and the United States notes. The small quantity of treasury notes listed as in circulation had either been lost or had, because of their scarcity value, found their way into the museums or into the hands of private collectors of curios.¹

Gold certificates may be thought of as warehouse receipts, or claim checks, for gold deposited with the Federal Government to be held in trust for its owners. They did not when issued represent an addition to the total supply of money in the country, but circulated merely as a substitute for the gold locked up in the Treasury. Carefully engraved on a special type of paper, they cannot be easily counterfeited, and counterfeit certificates, because of their defective workmanship, cannot long remain in circulation without detection. The gold certificates were issued in denominations ranging from \$10 to \$10,000.

Silver certificates represented silver dollars in the Treasury just as gold certificates represented gold. But there was an important difference between the two kinds of certificates. The gold represented by the gold certificates was worth as bullion the face value of the certificates. But the silver represented by the silver certificates had to be in the form of silver dollars to be worth their face value; as bullion it would have been worth less than half their face value. The silver certificates were

¹ Further discussion of these Treasury notes will be found in Chapter VII.

issued in denominations ranging from \$1 to \$1000. In recent years practically all one-dollar bills in circulation have been silver certificates.

- The United States notes in circulation in 1929 were, like the gold certificates, redeemable in gold when presented at the Treasury, but, unlike the gold certificates, they had not originally been issued as warehouse receipts for gold deposited with the Treasury. On the contrary, they had first been issued by the Federal Government during the Civil War as a convenient means of meeting pressing obligations which the Government did not consider it possible or expedient to meet through raising money by taxation or loans. Instead of representing gold deposited with the Treasury and being redeemable upon demand in that gold, these notes, commonly called greenbacks, when first issued, represented merely a promise of the Government to pay at some future time — a promise the Government was not able to make good until 1879, the date of the "resumption of specie payment." Even after the Government had the means of redeeming and retiring these notes, it was not found politically expedient to retire them, and a very large proportion of all that had been issued remained in circulation. When the old notes became unfit for use from wear and tear, they could be presented at the Treasury for redemption, in which case the holder would receive upon demand either gold or other forms of money or simply an equal amount of new notes of the same kind. When the Government paid out new notes of the same kind in redeeming the old, the total amount in circulation was not affected. If it redeemed the old notes in other kinds of money, it afterward paid out an equal amount of new greenbacks in meeting government expenses so that the total quantity of these notes outstanding tended to remain fixed. In 1900 a special gold fund was set aside in the Treasury for the purpose of redeeming the greenbacks on demand. In 1929 this fund amounted to \$156,039,088, as against a total issue of greenbacks of \$346,681,016, or about 45 per cent of the total amount of notes outstanding. Obviously, if all the holders of the greenbacks had presented them simultaneously for redemption, the redemption fund would have been far from adequate, and the Government would have been compelled to obtain gold from some other sources or confess its inability to pay. No such possibility existed in the case of the gold and silver certificates, since they were backed, as stated, dollar for dollar by gold coin or bullion and silver dollars respectively.

9. GOVERNMENT MONEY CLASSIFIED

The various kinds of government money described in the foregoing sections may be classified on the basis of their underlying sources of value as follows:

1. Primary money
2. Token money
3. Representative money
4. Credit money

Primary money is money made of material worth as much as the face value of the money into which it is converted. The only kind of money that we had in the United States in 1929 which met this test was gold. Primary money is likely to be standard money and legal tender, but standard and legal-tender money is not always primary money. For example, our greenbacks are legal tender, and during the period of the suspension of the gold standard during and after the Civil War, the greenbacks were our standard money, gold having gone out of use as money and having been priced as a commodity in terms of greenback dollars.

Token money consists of coins made of metal worth in bullion form substantially less than the face value of the coins. In 1929 all our silver, nickel, and bronze or copper coins were token money, but during a considerable part of our national history our silver coins were primary money with a bullion content equal in value to their face value. When and why they passed from the status of primary money to token money will be considered in later chapters. The only certain method of preventing the exchange value of token money from depreciating below its face value is to maintain its free convertibility into primary money.

Should any Government on a gold standard attempt to gain huge profits by coining great quantities of token coins in excess of the amount required for small-change transactions, it would be unable to maintain their convertibility into gold because they would accumulate in banks or in the hands of business men and would be presented for redemption in such large amounts as to exhaust the Government's gold reserve. The token coins would then depreciate in value below the value of gold money, and if excessive coinage continued, their value would sink to the level of the value of the metal from which they were coined. Should such coins be made of silver, for example, and be given full legal-tender power, silver money would become the primary money, with a bullion content equal to its face value. This would be because under these conditions people with debts to pay and other payments to make would

prefer to use silver, the cheaper money, and gold would not be used as money, but would be hoarded, used in the arts or exported, in accordance with the principle known as Gresham's Law, that cheap money drives dear money out of circulation. Prices thereafter would be made in terms of the silver money, and the standard of value, as the dollar, would mean, not the quantity of gold in a gold dollar, but the quantity of silver in a silver dollar. In this assumed case the silver money would have become primary money, not because its bullion content increased in value, but because its face value declined in terms of the commodities for which it could be exchanged. Concerning this much more will need to be said in later chapters dealing with the monetary history of the United States.

Representative money is money in the form of warehouse receipts for metallic money or bullion deposited in the Government Treasury, such as our gold certificates. Strictly speaking, the metallic money so deposited must be equal in value to the amount of the representative money issued against it, and may not be used for any other purpose than the redemption of the certificates. While both our gold and silver certificates have commonly been named as examples of representative money, it should be noted that the silver certificate of 1929 was not a true type of representative money, because it represented only silver dollars with a bullion content far below the face value of the certificate, and was maintained at its face value only by its convertibility into gold. In other words, the silver dollar certificate represented, not silver worth the face value of the certificate, but rather a promise to pay in gold stamped on a piece of silver worth less than fifty cents.

Government credit money represents merely the Government's promise to pay. If credit money of a Government on the gold standard is to remain as good as gold, it must be redeemable in gold upon demand at all times, and this requires that the Government maintain an ample gold redemption fund, such as that held by the United States Government in 1929 against the greenbacks, which were a good example at the time of such credit money.

Credit money is properly so called because it is a means whereby the Government obtains at once valuable goods and services in exchange for a promise to pay later, the essence of credit being the exchange of a promise to pay some time later for present goods and services. The government process of achieving this apparently desirable end is merely that of printing such promises to pay in the form of paper money, and of using this money to pay for labor and materials currently required instead of obtaining funds by taxation or by interest-bearing bond

issues. When a Government is unable to redeem its credit money upon demand in gold or other primary money, the paper money is said to be inconvertible and tends to depreciate below the value of the primary money. When such inconvertible paper money is given legal-tender power, and must for this reason be accepted by creditors in payment of debts, it is called fiat money because it then becomes money by virtue of government decree rather than because of any value derived from any other source. "Let these pieces of paper be money," says the Government in effect, and they are money good for the purpose of paying debts, however worthless they may become for other purposes. Inability of the Government to redeem its credit money ordinarily results from excessive issues of it, and the degree of depreciation which it suffers depends primarily upon the quantity that is printed and placed in circulation, although other factors, later to be considered in detail, enter into the problem.

To make the classification of government money given at the beginning of this section complete, we should add as a fifth class that type of money just considered — fiat money. Of this we fortunately had none outstanding in 1929. But in 1933 the greenbacks, which had been credit money convertible upon demand into gold, became inconvertible and could properly be designated as fiat money. In terms of gold the greenbacks, as well as all our other forms of paper money, had depreciated within a few months after suspension of gold payment to less than 70 per cent of their face value. At that time great uncertainty prevailed as to whether the paper money would again be made redeemable in gold, or depreciate much further as a result of excessive additional issues.

10. BANK NOTES

To round out this brief preliminary description of our monetary system, as it stood in 1929, a few words must be said concerning our three types of bank notes — national bank notes, federal reserve notes, and federal reserve bank notes, but detailed discussion of these three types of money will be reserved for later chapters.

The national bank notes were promises to pay issued by national banks, which were privately owned and operated banks organized under federal banking laws and subject to close supervision by the Federal Government.¹ These notes could be freely accepted as money with safety because the promise to pay which they represented was secured by the deposit in the Treasury of the United States of government bonds owned by the respective banks which issued the notes equal to or ex-

¹ See Chapter XXX for an explanation of the circumstances which led in 1935 to the practical retirement from circulation of the national bank notes.

ceeding in value the total amount of notes outstanding at any given time. Each bank had to buy bonds and deposit them in the Treasury as a condition of issuing its notes. In addition to thus depositing bonds as security, each bank had to stand ready to redeem its own notes in lawful money at its own counter at any time and had to maintain with the Treasury a cash deposit of 5 per cent of the amount of its outstanding notes which might be used by the Treasury officials in redeeming any of the notes presented for redemption at the Treasury. National bank notes were, therefore, not only as safe as government bonds, but even safer, since they were secured by government bonds and cash exceeding in amount their face value. Failure of a national bank could not affect the holder of its notes, because in that case the government bonds would be sold by the Treasury and the proceeds of the sale used to redeem the notes. No one ever lost a dollar through inability to obtain redemption of a national bank note in lawful money. It should be noted, however, that lawful money includes greenbacks and these have not always been redeemable in gold.

Federal reserve notes were bank notes issued by our twelve federal reserve banks, which were established in 1914. They were a newer form of currency than the national bank notes. As the law stood in 1929, federal reserve banks, as a condition of issuing federal reserve notes, had to deposit with an agent of the Federal Reserve Board not less than 100 per cent of the face value of the notes in gold and commercial paper, not less than 40 per cent of the total being in gold. Commercial paper may be provisionally defined as consisting of various types of short-term written promises of business men to pay, and only specified types of commercial paper were made eligible as a basis of issuing federal reserve notes. Federal reserve notes, in addition to being secured by this deposit of gold and commercial paper, were secured by the general assets of the federal reserve bank that issued them and were made the legal obligation of the United States Government. Nothing less than the inability of the United States Government itself to maintain its promises to pay in gold could cause these notes to depreciate in value below their face value in gold.

The federal reserve bank notes, like the federal reserve notes, with which they should not be confused, were issued by the federal reserve banks, but in respect to the conditions under which they might be issued and the means by which they were secured, they resembled the national bank notes more closely than the federal reserve notes. As we shall see in later chapters, the conditions of issue of these three types of bank notes were materially altered by changes in banking laws in 1932 and 1933.

11. BANK CHECKS AND BANK DRAFTS

The foregoing brief description of our gold, silver, nickel, and copper money, our four kinds of government paper money, and our three kinds of bank notes, while it embraces a great variety of money, nevertheless leaves out of account what has long been from the point of view of volume the most important of all our means of payment for goods and services, namely the bank check.

Approximately 90 per cent of all "cash" payments made in the United States have for many years been made by bank checks and bank drafts. A bank check is a written order by an individual on a bank to pay a designated party a specified sum of money upon demand. Such an order drawn by one bank on another bank is called a "bank draft." Whether or not a check is good depends, of course, upon two things: namely, upon the right of the drawer of the check to order the bank to pay and upon the ability of the bank to make payment as ordered. If the drawer of the check has no deposit in the bank, or if the bank is unable to pay out deposits upon demand, the check is worthless. For these reasons checks do not circulate freely as money, and are accepted as cash by prudent persons only when they have personal knowledge of the integrity of the drawer and the soundness of the bank on which they are drawn. When endorsed by the person in whose favor they are drawn, bank checks may enjoy a limited circulation as money, but they tend always to be presented for payment promptly to the bank on which they are drawn, and thus to pass quickly from circulation, in contrast to government paper money and most bank notes which tend to remain in circulation indefinitely.

12. KINDS OF BANKS

Should this summary description of our monetary system be extended so far as to cover not only bank notes, bank checks, and bank drafts, but the banks themselves, it would be necessary to describe a very imposing and confusing array of institutions—federal reserve banks, federal land banks, joint-stock land banks, federal intermediate credit banks, home-loan banks, national banks, state banks, stock savings banks, mutual savings banks, Morris-plan banks, investment banks, chain banks, branch banks, group banks, and other types of banking institutions not called banks at all, such as trust companies and building and loan associations. It would appear from even a brief survey of these multifarious banking institutions that, in helping to provide us with money and the mechanism of exchange in 1929, they played widely varying rôles. Some, for example, permitted checks to be drawn upon

them payable upon demand, and some did not; some issued bank notes and some did not; some performed both of these bank functions and some performed neither of them; some were controlled or inspected by the Federal Government, some by the State Governments, and some, unfortunately, by neither. Since, however, the purpose of this introductory chapter is merely to provide the reader with a bird's-eye view of the whole monetary system of the United States, and not with a detailed and intimate description of its banking mechanism, there is no need to embark at this point upon an extended discussion of all our various types of banks.

13. THE AMOUNT OF THE VARIOUS KINDS OF MONEY

We may now supplement our brief description of the various kinds of money listed in the *Treasury Statement*, with a few comments upon the amounts of the eleven kinds of money in the country on February 28, 1929. First of all should be noted the distinction between the total stock of money of all kinds in the country and the amount in circulation. Money in circulation did not include money held in the United States Treasury or by the federal reserve banks, but included money in the hands of the people, in the tills and vaults of banks other than reserve banks, and in the treasuries of state and local governments. In short, money in circulation included all money not held by the Treasury or by the federal reserve banks; it even included money hoarded by misers and others, and government paper money and bank notes issued by our Government and the banks and held outside the continental limits of the United States or actually lost or destroyed. Our Government and banks knew, of course, how much money they had issued and outstanding, but they had no certain way of determining how much of this currency had been exported, lost, or destroyed. Ordinarily, not much paper money of any country will be exported to other countries, since money payments made in foreign countries are usually made in the money of those countries or in gold. But during and after the World War considerable quantities of paper money issued in the United States, and therefore redeemable in gold, were placed in circulation in foreign countries which were suffering from the evils of depreciated or repudiated paper money. In recent years much of this money has returned to the United States, but in 1929 some of it was still in circulation outside our national boundaries.

It might be inferred that, since the amount of money in circulation includes all money not held in the Treasury or by the federal reserve banks, the total stock of money in the country would be the amount in

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eighths of all the gold in the country. The amount of gold in circulation, not including gold certificates, was only \$377,512,279, or \$3.17 per capita. Since part of this amount was held in the vaults and tills of thousands of commercial banks, it is obvious that the people were making very little direct use of gold money in day-to-day business transactions. In fact, after the World War one rarely saw gold coin in circulation.

Our Treasury statement shows that gold certificates were circulating more freely than gold itself, the amount of gold certificates in circulation having been \$935,448,259, or \$7.84 per capita. Since gold certificates could then have been freely exchanged for gold, it is obvious that the people preferred gold certificates to gold coin as a medium of exchange. A similar but more pronounced preference is observable for silver certificates over silver dollars. Of the total amount of silver dollars, \$539,961,775, only \$44,075,337 were in circulation, or 37 cents per capita, whereas there were in circulation silver certificates to the amount of \$385,389,177, or \$3.23 per capita. The silver dollar was so unpopular as currency that in the Eastern States it was rarely seen, although in Colorado and other Western States it circulated freely.

The subsidiary silver coins were in greater demand; of the total amount of \$303,941,464, more than \$280,000,000, or \$2.35 per capita, were in circulation. Likewise a very large proportion of all the minor coins and of the three kinds of bank notes and of the greenbacks was in circulation. As to the bank notes, it should be observed that there was in circulation a much greater amount of federal reserve notes than of any other kind of money, the amount of these in circulation having been \$1,646,523,111, or \$13.80 per capita, out of a total amount of money in circulation of \$4,698,362,323, or \$39.38 per capita. These three kinds of bank notes combined amounted to about half of the total amount of money in circulation.

At the bottom of the Treasury statement just analyzed are given some comparative figures for earlier years. It is interesting to note from these that the total amount of money in the country in 1914 was almost four times as great as in 1879, and that the amount of money in circulation per capita had more than doubled during this period of thirty-five years. During the six years from 1914 to 1920 there was a further great increase in the quantity of money in circulation while the total amount in the country more than doubled. From 1920 to 1929 the amount of money in circulation declined rather sharply from \$53 to \$39 per capita, although the decline in the total quantity of money in the country was more moderate. In 1931 and 1932, as we shall see in

a later chapter, the quantity of money in circulation increased enormously and reached a new high mark for all time.

14. MONETARY QUESTIONS

It will occur at once to anyone with an inquiring type of mind that the foregoing brief description of the monetary system of the United States has raised a great many more questions than it has answered, and that is, in fact, one reason why this introductory chapter has been written. Why, for example, do we use money at all, and if we find it necessary or expedient to use it, why have so many kinds? Are some kinds of money better than others, or is it a matter of indifference which kind we use? If several kinds serve our purpose better than a single kind, in what proportion should the different varieties be used? Why, for instance, have more federal reserve notes than gold certificates, more gold certificates than national bank notes, and more national bank notes than greenbacks? Why have more bank paper money than government paper money, and more gold than silver? Why have free coinage of gold but not of silver, and more silver in silver dollars than in a dollar's worth of dimes? Why have more money at some times than at others? Do we have too little at some times and too much at others, or do we always have too little or too much, or just enough? Do we have too much of some kinds and too little of other kinds, or do we have just the proper blend to give the best results? Does business really require a carefully prepared mixture of eleven kinds of money to make it thrive, or would just one kind be better than many? Has our monetary system been intelligently planned to fit our needs, has it grown haphazardly out of the clumsy blunderings of political incompetents, ignoring in their monetary enactments sound monetary principles, or is it the predatory result of the machinations of schemers and sharpers who use it as a device to rob honest people of the fruits of their toil? Even if a monetary system has been intelligently and honestly planned to meet the needs of a people at a given time, does it not need sometimes to be overhauled and remodeled, or is there never any danger of obstructing trade and commerce with an antiquated monetary system?

An ignoramus might answer all of these questions glibly, since no one undertakes to solve all the abstruse problems of money and banking with more confidence than he who knows least about them. The careful student answers with more hesitation and discrimination. To him the answers to some of these questions seem obvious — they are clearly indicated by monetary theory and monetary history. But in the case of other questions, he must hedge his answers with qualifications, and

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in the case of some perhaps suspend final judgment. In the following chapters of this book the writer gives such answers to monetary questions of the type propounded above as seem to him most reasonable in the light of his study of monetary history and theory, but some of these questions other writers would answer differently.

CHAPTER II

THE FUNCTIONS AND QUALITIES OF MONEY

1. MONETARY ILLS

DIP where you will into the monetary history of the world during the last two hundred years and you will find the people suffering from badly contrived and badly managed monetary systems. The evils are not sporadic, but general and persistent. No country has escaped; no time has been immune; and at no time in history have the pernicious effects of unsound monetary and banking policies been more widespread and serious than during the period dating from the outbreak of the World War in 1914 down to the present time. There are living today hundreds of millions of people in Europe and America who could truthfully say of the currency of their respective countries what Pelatiah Webster said of the money of the American Revolutionary Period, namely, that the iniquitous currency had polluted the equity of the laws; turned them into engines of oppression and wrong; corrupted the public administration of justice; destroyed the fortunes of thousands who had the most confidence in it.

There can be but little doubt that economic losses growing out of monetary and banking disturbances in the United States during the depression of 1929-33 exceeded in amount the entire cost to us of the World War, and that such disturbances caused similarly heavy losses in Europe and the rest of the world. And it should not be forgotten that such economic cataclysms as we have recently observed in the United States and other countries involve more than mere financial losses. They involve just as truly as war itself the loss of hundreds of thousands and even millions of lives, since lives can be cut short by starvation, worry, and malnutrition quite as effectively, if not so sensationally, as by bullets, bayonets, and poison gas.

The question may then well be raised, Why use money if doing so entails such grievous consequences? It is obvious that money of itself does nothing directly to sustain life or to make life more enjoyable. Food, clothing, shelter, fuel, books, music, automobiles — these are produced neither by the government mint or printing press, nor by the banker in his little cage, and not even in the gold and silver mines, but rather by land, labor, capital, and management. Communists and others pondering this problem have at times pronounced money a

non-essential, and have considered its abolition. Under communism it is conceivable that money as we know it might be abolished without loss to the community, but not so under the capitalistic system of private enterprise, with its large-scale industries privately owned and operated for profit, with its costly and complicated machines and its extensive use of the complex division of labor. This system cannot be operated without the use of a medium of exchange, a standard of value, a standard of deferred payment, a unit of account. These four phrases represent at the same time an enumeration of the functions of money and a definition of money. Money is what money does, and it is most intelligibly defined in terms of its functions. Money was used to serve these four purposes, and also as a store of value, long before the capitalistic system developed, and it might be so used under communism, as it in fact actually is used in Russia at the present time. But under other systems of economic organization it is merely useful; under capitalism, it is indispensable. Consider why this is so.

2. FUNDAMENTAL FUNCTIONS OF MONEY

To demonstrate that money is a necessary adjunct of the capitalistic system of private enterprise involves a consideration of the functions of money. While writers commonly enumerate four or five functions, there are in reality only two fundamentally distinct functions of money, namely, that of a medium of exchange and that of a standard or common measure of value. Even these two functions are closely interrelated, as we shall see, and other uses of money often named, such as a standard of deferred payment, unit of account, and store of value, represent merely different names for or slight variations of one or the other of the two fundamental functions.

A medium of exchange is literally a go-between, an intermediary agent, facilitating the exchange of one commodity or service for another. A farmer, for example, has produced more potatoes than his own household requires, but no sugar. If, now, he should trade some potatoes directly to someone else for sugar, the trade would have been consummated without a medium of exchange. If, however, the farmer should sell his potatoes for money and with the money buy sugar, he would be using the money as a medium of exchange. In this case he would also and necessarily be using money as a measure of value. He would not merely be trading potatoes for money in the abstract, but a certain quantity of potatoes for a definite quantity of money, and he would in turn trade a definite amount of money for a definite quantity of sugar. He would, in other words, have been measur-

ing the value of potatoes and sugar in terms of money, or he would have sold his potatoes and bought his sugar at a price.

If this trading had taken place in the United States sometime prior to our departure from the gold standard in 1933, the price of potatoes would have been expressed in terms of our gold dollar of 23.22 grains of pure gold, as would also the price of sugar. A price of one dollar a bushel for potatoes and of five cents a pound for sugar would have implied the following equations:

$$\begin{aligned} 56 \text{ pounds of potatoes} &= 23.22 \text{ grains of gold, or } \$1 \\ 20 \text{ pounds of sugar} &= 23.22 \text{ grains of gold, or } \$1. \end{aligned}$$

It is obvious that money — gold in this case — is used here as a common measure or denominator of value, and that by this means it becomes possible to add the value of a bushel of potatoes to that of twenty pounds of sugar, and express the total in a single figure, \$2. This common denominator of value becomes the unit of account in bookkeeping. By expressing the value of all his possessions in terms of this unit, the gold dollar, for example, the farmer, the storekeeper, or the manufacturer can keep his accounts in a simple and intelligible way.

When this unit of account is fixed by law as consisting of a given amount of metal of some kind, as 23.22 grains of gold, and is made legal tender, it becomes the country's standard of value as well as its standard of deferred payment, in terms of which debts are paid. If the farmer had sold some wheat and, instead of expending the money received for it at once, had laid it away for use at some subsequent time, he would have been using this money as a store of value.

3. MONEY AS A STORE OF VALUE

Money may be used as a store of value in two ways or for two purposes. First, it may be kept on hand in moderate amounts for relatively short periods of time, particularly by persons who do not carry a bank account, as a matter of convenience in making purchases at an opportune time. Thus, farmers and workmen in moderate circumstances may have on hand at times several hundred dollars in cash. It has often been suggested to such savers that this is an unwise practice, since this money may be lost or stolen from its hiding-place, and that it would be better to place the money in a bank where it would at least be safe and might draw interest. When, however, about one third of our banks failed, with enormous losses to depositors, during the period from 1921 to 1933, this advice unfortunately lost much of its value. In such a period of numerous bank failures as we have just been passing through,

many people who ordinarily do not keep much money on hand tend to withdraw considerable sums from banks and hoard them, and this represents the other purpose for which money is used as a store of value. Not only as a result of bank failure, but because of political turmoil, or of inability to find suitable investments for savings or for other reasons, some persons may hoard large sums of money over long periods of time. Two or three hundred years ago, for example, it was difficult for a person not himself engaged in business to find desirable investments. There were then no corporation stocks and bonds, nor a great variety of government bonds, and many other kinds of investments now available were then practically unknown. Under the circumstances it was not uncommon for prosperous persons to accumulate a considerable sum of hard cash and hide it away in strong boxes concealed in secret nooks in their houses or buried in their grounds. With the development of almost unlimited opportunities for profitable and diversified investments, this use of money as a store of value has diminished to small proportions except in times of abnormal financial and political uncertainty such as have prevailed since the World War.

In respect to the use of money in moderate amounts as a temporary store of value, it is difficult to distinguish this from the use of money as a medium of exchange. One does not ordinarily receive money for what he sells and spend it in the same instant of time. An interval elapses between the time of selling and the time of buying, and whether the time is long or short, the money would seem to remain a medium of exchange. If there is money serving specifically as a store of value and not at the same time as a medium of exchange, aside from the small quantities secreted by misers and the excessively timid in normal times, it is the money held in bank reserves and the Government Treasury.

4. MUST THE STANDARD MONEY AND THE MEDIUM OF EXCHANGE BE IDENTICAL?

It has already been noted in this chapter that money used as a medium of exchange must also of necessity be used as a common measure of value, as in the case of the farmer who exchanges potatoes for money and money for sugar. The question may now be raised whether the standard of value and the common measure of value in business transactions are identical, and if so, whether the standard money of the country must also serve as its medium of exchange. Consider the situation in a country which has chosen to make gold its standard money, and a definite quantity of gold called a dollar, say 23.22 grains of pure gold, its standard, or unit of value. As long as the country maintains

that standard, all property and all services are valued in terms of such dollars of 23.22 grains of gold, and business transactions are carried on and obligations are met on that basis. The standard of value, the measure of value, the unit of account, and the standard of deferred payment are all identical — 23.22 grains of gold.

But how about the medium of exchange? In 1929, as we observed from the Treasury statement reprinted in the preceding chapter, gold money circulated in the United States only to a limited extent, and the same was true of the gold certificates. The money in circulation — the actual medium of exchange — consisted mainly of bank notes, greenbacks, silver certificates, and subsidiary silver. The gold and gold certificates comprised but little more than one fourth of all money in circulation, and the gold alone less than one twelfth. Moreover, something like ninety per cent of all business transactions were conducted without the use of actual money at all — bank checks serving here as a substitute medium of exchange. It would doubtless be correct to state that gold was used as a medium of exchange in less than one per cent of all business transactions in the period between the World War and the collapse of the banking system in 1933. From this it would seem that there had been almost a complete separation between the money used as a standard of value and the money used as a medium of exchange. Might it then not reasonably be concluded that the separation could be made one hundred per cent complete, so that no more gold at all would be required as a medium of exchange, and so that it would have no other necessary purpose than to serve as a standard of value? And if this were the only necessary function of gold, would not one unit of 23.22 grains be sufficient to serve this purpose, being in fact merely a tangible expression of the legal standard — the gold dollar? One must proceed with care here, for it is possible to fall into gross and costly errors of more than academic importance.

It will be helpful to clear thinking on this point if one bears in mind that all the various kinds of money other than gold which were in circulation during our gold standard days were not acceptable in trade at their face value in gold coin merely because they were labeled money, but rather because they represented promises of the Government or the banks either to redeem them directly in gold, or to redeem them in other forms of money which in turn were redeemable upon demand in gold. It was only the interchangeability of these various promises to pay with gold coin that maintained them on a parity with gold money, and this applies also to the bank checks and bank drafts so widely used as substitutes for money.

In a broad sense all these various kinds of money and substitutes for money were representatives of gold, as gold certificates were more specifically. Circulating in the place of gold in which they were redeemable, they permitted the gold to remain in the vaults of the federal reserve banks or in the United States Treasury. What sellers of goods and services accepted in reality was not pieces of silver and paper worth little or nothing in themselves, but promises, believed to be good, to pay in gold. These substitutes for gold then actually represented the circulation of gold — vicariously — and gold, the standard money, was in this sense also the real medium of exchange and measure of value in business transactions.

When the circulating medium of exchange becomes irredeemable in gold in a country which has been on the gold standard, and thus no longer represents the vicarious circulation of gold, it becomes itself by that very fact the standard of value, as was the case with our greenbacks during the Civil War and with our various kinds of paper money and silver dollars in 1933. The position of the paper money as standard money will become more clear if it is declared to be legal tender by law. If we may draw our conclusions from monetary history, there is only one way in which to ensure redemption of other kinds of money in gold upon demand, and that is to maintain such large gold reserves in the banks or the Treasury that they amount to a very substantial percentage of all the other kinds of money and substitutes for money in circulation. It is not necessary that the gold actually be used in large quantities as a medium of exchange, but it is necessary that it be available for such use, for, if it is not available, confidence in the convertibility of the paper money and bank checks and deposits wanes. Waning of confidence when gold for redemption purposes is lacking is fatal; the banks and the Government must then face a run on their gold reserves and speedily confess inability to pay in gold. Once such a confession is made, the equality between the face value of the inconvertible money and its actual value in gold coin and bullion vanishes. It depreciates in value until a dollar of it will exchange for only a fraction of the standard gold dollar, or, in other words, gold goes to a premium. How fast or how far it will depreciate and how high prices will rise in terms of this sort of money depends upon various factors discussion of which will be postponed to later chapters.

5. PRE-CAPITALISTIC ECONOMIC ORGANIZATION

Let us now turn from this discussion of the functions of money to an elucidation of the statement made a while ago that, although money

might be merely useful under other forms of economic organization, under the capitalistic system of private enterprise it is indispensable. Obviously, under that early form of economic organization referred to as the self-sufficing household, money was not required; in such a group there did not need to be an exchange of products on a *quid pro quo* basis. All the products of the group could be thrown into a common store from which the various members of the group would be supplied, within the limits of the store, according to their needs. These ancient groups never suffered from the shocks and anxieties of monetary crises and banking panics, but nevertheless they did not enjoy a high degree of economic security. Within these small groups division of labor, or specialization, could be applied only in a limited way. As a consequence goods produced and available for consumption were small in quantity and limited in variety, and the standard of living of the group was necessarily low — not much above the level of the equally self-sufficing families of wild animals. With scanty stores laid up for future use, they frequently suffered famine. Those who in time of national distress such as we have been passing through would find refuge from monetary ills by reverting to that ancient system would doubtless not find it measuring up to their expectations when put to trial. The "back to the soil" movement widely advocated as a remedy for unemployment represents a tendency toward such a reversion — economic atavism, as it were.

The handicraft system, which was the dominant form of industrial organization for thousands of years before the Industrial Revolution of the late eighteenth and early nineteenth centuries, afforded greater opportunity for specialization than the self-sufficing household, and consequently achieved greater efficiency in production and permitted a higher standard of living. With each worker specializing at a trade, as that of the tailor, the shoemaker, or the blacksmith, exchange of products became necessary, and money came into use as a medium of exchange, not as a necessity, but merely as a convenience. If the handicraftsmen had found that their use of money involved such intolerable evils as have lately afflicted the capitalistic world they could have abolished its use and resorted to trade by barter.

Trade by barter — that is, direct exchange of one commodity for another, without the interposition of money as a medium of exchange — involves some serious difficulties, even under a simple form of economic organization such as the handicraft system. One of the difficulties arises from the fact that each party to the trade must have what the other wants and want what the other has. This condition has come to be referred to as the double coincidence of barter. Concretely, the

shoemaker who wants to trade shoes for hats must find a hatter who wants to trade hats for shoes. As an alternative the shoemaker might accept things he did not need in exchange for his shoes — for instance, goats or pigs — and then undertake to find a hatter willing to trade hats for goats or pigs, thus accomplishing by roundabout trading what he could not by direct trading. A great deal of time would be lost in such roundabout trading.

A second difficulty of trade by barter is involved in fixing a ratio of exchange which makes the trade possible, particularly when neither of the objects to be exchanged is divisible into fractions without loss of value — for instance, hats and shoes. If, in this case a fair rate of exchange were determined to be seven pairs of shoes for eleven hats, then these two numbers would represent the minimum quantity of these articles that could be traded. Obviously, this difficulty would not be encountered in trading wheat for potatoes, or potatoes for shoes. A further disadvantage of trade by barter is that without a common measure or standard of value, such as is represented by a gold dollar or franc or mark, in terms of which all commodities are valued or priced, traders must learn to know the value of any commodity in terms of any other commodity, involving a very great number of ratios of exchange.

Nevertheless, trade by barter, while presenting difficulties, is feasible under a form of economic organization such as that of the simple handicraft system with production carried on in small shops, on a small scale, by a master with a few helpers, working with simple tools. Among the workers in such shops there is no great degree of specialization or differences in functions, and no insuperable difficulties would arise in arranging for an equitable division of the product. Even the distribution of the product between labor and capital would involve no great problem, since capital employed is relatively small.

6. MONEY INDISPENSABLE UNDER THE CAPITALISTIC SYSTEM

Under the capitalistic system, as it has developed in advanced industrial countries, trade by barter has become wholly impracticable. We have here not merely a few men co-operating, with the aid of little capital, in producing some simple product like shoes, of which each participant might receive directly, and without the interposition of money, a share generally regarded, without a great amount of squabbling, as fair. We have instead hundreds, or thousands, and in some cases, hundreds of thousands of persons co-operating in a joint enterprise under conditions that make impossible a simple division of the physical product among them.

The various persons connected with the enterprise contribute different things or unlike amounts of the same things so that equal sharing of the product is inequitable, and a common measure of value is necessary to determine the fair share of each contributor. Some have contributed labor of various sorts — skilled, unskilled, clerical, managerial. Some have contributed capital, and the contributions of capital may have been made subject to varying conditions. Some have given capital with the understanding that they took no risk of loss; some have contributed capital with the understanding that their share of the capital would bear the brunt of all losses of capital. The innumerable classes of bonds, notes, and stocks issued by corporations indicate how widely different are the conditions accepted by the contributors of capital. Some contribute neither labor nor capital, but merely ripe judgment or the prestige of a great reputation for successful business operations. It is needless to enlarge upon this particular difficulty of determining a fair distribution of the product without some common measure of the value of the goods or services contributed by each participant in the concern.

The very nature of the product of modern business concerns represents another obstacle in the way of dispensing with the use of money. In most cases the physical product could not be distributed directly among the contributors to the enterprise or would not be wanted by them; consider, for example, locomotives, steam shovels, surgical instruments. Nor could such products be traded with advantage to other groups of producers for other products more directly useful and more readily distributed. Such trade by barter would merely multiply the difficulties.

If money had never come into use before, it would have been numbered of necessity as one of the great inventions of the Industrial Revolution, which, along with machinery, mechanical power, and complex division of labor, made the factory system of production and distribution possible and effective. With the use of money in its double capacity of a measure of value and a medium of exchange, the difficulties of distribution under the capitalistic system, which would be insuperable with exchange only by barter, largely melt away. Money reduces all things to a common denominator, and makes it possible for each contributor to a business enterprise to receive his fair share of the product in a usable form; provided only that prevailing market prices are in such relation to one another that they may be considered fair. Workers are paid in money at the prevailing rates of wages for each particular class of labor. Bondholders are paid the prevailing rate of

pure interest for the use of their capital, with an additional premium scaled in proportion to the risk they may be presumed to have assumed of losing their capital. The stockholders are similarly rewarded with a greater premium if the enterprise is highly successful, and penalized with the loss of their capital if the project is poorly planned and managed and collapses. Those who supply materials and supplies are paid at the prevailing market prices.

This capitalistic system of production and distribution, now operating in its second century, has, during most of its lifetime, proved to be so much more efficient than other systems which have preceded it, such as the self-sufficing household system and the simple handicraft system, that it would be folly to abandon it and revert to the older systems in order to escape the evils connected with the system of money exchange. There can be but little question that at the very depth of a bad depression under the factory system of production we are producing more goods per capita than were ever turned out by other systems of production in their most prosperous times. And it is not certain that the privation and suffering of the unemployed during a capitalistic depression are as great as the privation and suffering which often fell to the lot of the common people in the so-called good old times.

7. COMMUNISM AND MONEY

There are millions of people who believe that communism represents a form of economic organization more desirable and more efficient in providing a high standard of living for the average man than capitalism. Whatever the merits or defects of communism may be, it is true that under this system monetary ills could be avoided because no money would be required. The communistic state, theoretically, represents the welding, at least for economic purposes, of all the families of a country into one large family. All the individuals of this large family produce, according to their respective abilities, for the common store, and from the common store may be supplied with goods according to their needs. The pure communistic state is, in effect, a great self-sufficing family, not concerned of necessity with trade on a *quid pro quo* basis, except in connection with international trade, trade which might readily be conducted on a barter basis.

This is not the place to enter into a detailed discussion of communism, but it is necessary for our purposes to point out the basic fact that no more goods can in the long run be drawn from the common store of the communistic state than have been placed therein, and to note some of the inescapable consequences of this fact. Since no more

can be drawn out of the common store than is placed therein, it becomes necessary to balance production with consumption, not only for all goods in the aggregate, but for each particular class of goods, and this requires that someone in the communistic state must be given authority over both the production and the consumption of the members of the state. For it is to be assumed without question that if left to their own inclinations the individual communists would produce so little and want to consume so much that the common store would loom large in no other form than as a bone of contention.

Official control over production and consumption down to the most minute detail being essential to the functioning of the communistic state, it remains to consider by whom this power shall be exercised. The control must in the nature of things be highly centralized. None but a highly centralized government could succeed in so planning production and distribution as to provide goods in the proper quantity and variety to citizens in all parts of the country at all times, so that neither gluts nor famine should prevail. Under the system of private enterprise this balancing of production and consumption, this geographical and personal distribution of goods, although far from perfect, is brought about in its imperfect form automatically through the interaction of demand and supply and market price. People's consumption is limited not merely by their desires, but also by their money incomes and the prices of goods. Warehouses do not tend to become completely emptied, for when certain kinds of goods become scarce their prices rise, and production is increased under the spur of larger profits. Gluts may develop, but when they do prices of the particular commodities concerned fall, consumption is increased, and production declines. A glut in one section of the country while a famine exists in another section brings its own remedy — a difference in prices more than covering the cost of transportation from the point of glut to the point of famine. Only artificial price-fixing by governments or private monopolies prevent such adjustments from being made with a fair degree of promptness.

For a few officials to undertake to do under communism what is more or less automatically accomplished under the price and profit system by price variations, is to undertake a tremendously complicated task and to exercise tremendously important powers. Unless they can exercise these powers in a way that will satisfy the majority, it does not seem that they can be chosen and remain in power under a democratic system. Communistic experiments on a democratic basis have usually been short-lived simply because the men placed in control have not been able to satisfy the majority of the members of the community in their

efforts to balance production and consumption of goods. In a communist state, it should be emphasized, there must not only be a general balancing of production and consumption of the various classes of commodities, but particular individuals must be told what they must produce, and how much, and when, and likewise particular individuals must be restricted in their consumption of the things they desire in accordance with the total quantity available for consumption by all. In the nature of things dissatisfaction with tasks allotted and rations allowed is likely to be rampant. It is significant that the great national communist experiment in Russia, dating from the overthrow of the czarist régime, has been carried on under a dictatorship. On a democratic basis it would long ago have collapsed because the administrators would have been voted out of office as frequently as they demanded of the people more than the latter wanted to give in labor and sacrifice, as frequently as they gave to the people less than they demanded in leisure and luxuries.

The Russian venture in communism is the more significant for the people of the United States in view of the great experiment of our own, begun in 1933, of economic planning on a national basis and of government control over the whole field of industry, involving in some measure the problems of administration of the communist state. Should this experiment, as some persons hope and as others fear, lead us into communism itself, our monetary problems would grow less whatever might be the result in problems of administration and control of production. It may be pointed out, however, in this connection, that, while communists have at times demanded the abolition of money, the communist Government of Russia has chosen to retain it as a useful device. In communist Russia it still serves as a standard and measure of value, a unit of account and a medium of exchange, although subject to restrictions not found in a capitalistic state. To some extent, too, money and prices are still used in Russia to regulate production and consumption.

8. THE QUALITIES OF MONEY AND ITS QUANTITY

In the foregoing sections of this chapter have been discussed the functions of money and the reasons why money of some sort is indispensable in a capitalistic state. In the preceding chapter were described the various kinds of money used in the United States in recent years, and the various kinds of money were classified under the five heads, primary money, token money, representative money, credit money, and fiat money. We are now ready to proceed a step farther

in our discussion of money, and to consider the qualities which good money should have.

Here the first thing to note is that monetary controversies — and they are rarely lacking — tend to center about the quantity of money rather than about its qualities. People quarrel less about the kind of money that they want their country to have than about the amount of it which they want placed in circulation. In so far as there are important differences of opinion about what constitutes the right kind of money, they are usually based upon the fact that one faction wants the kind of money which can most readily be increased in quantity while the other faction is opposed to the expansion of the currency and thus prefers money which cannot readily be increased in quantity at the whim of the Government or the will of the people. Thus, the advocates of the use of silver and paper money at various times in the United States have cared less for the silver and paper money, as such, than for the greater quantity of money that could be placed in circulation by free coinage of silver or unlimited use of the government printing press. They have objected, not to gold money in itself, but to the small quantity of gold money, this quantity being limited strictly by the productivity of the gold mines of the world and the state of international trade.

9. QUALITIES OF GOOD PRIMARY MONEY

It will be convenient to begin this part of our discussion with an enumeration of the qualities of good primary money. Primary money, it will be recalled, has been defined as money made of materials worth as much as the face value of the money into which they are converted and is to be sharply distinguished from token money, representative money, and credit money. The value of the primary money lies in the material of which it is made, whereas the value of the token, representative, and credit money depends, generally speaking, upon the promises made, implicitly or explicitly, to redeem these various kinds of money in primary money having a commodity value equal to its face value. Good primary money should be both a good measure or standard of value and a good medium of exchange. The qualities which a commodity used as primary money should have, to serve both of these purposes well, are readily perceived and have often been enumerated.

In his admirable book *Money and the Mechanism of Exchange*, published more than half a century ago, the famous English economist Jevons enumerated the qualities of good money as follows:¹

¹ W. S. Jevons, *Money and the Mechanism of Exchange*, p. 31. D. Appleton and Company, New York, 1892.

THE FUNCTIONS AND QUALITIES OF MONEY

- | | |
|----------------------|-----------------------|
| 1. Utility and value | 5. Divisibility |
| 2. Portability | 6. Stability of value |
| 3. Indestructibility | 7. Cognizability |
| 4. Homogeneity | |

Because of the excellence of his list and his accompanying discussion, later writers on money have commonly followed Jevons in their enumeration of the qualities of good money, with, however, such minor variations as the substitution of durability for indestructibility, obviously an improvement in the choice of terms, or the substitution of uniformity for homogeneity, not so obviously a better term.

All seven of the qualities enumerated by Jevons are essential to good primary money which is to serve as a medium of exchange. They are not all essential to primary money which is not itself to be used as a medium of exchange directly, but which is to be represented in circulation by credit, token, or representative paper money. Neither, of course, are they all essential to the credit, token, or representative money. This matter deserves careful consideration.

First of all a commodity which is to be used as primary money must have utility or the power to satisfy human wants as a commodity, and must be sufficiently scarce to give it value or power in exchange as a commodity. If it does not have these powers as a commodity, it will not make good primary money because it will not be generally acceptable in exchange. This does not mean that it must have the power to satisfy directly the want of each person to whom it may be tendered as money, but it does mean that it must be generally recognized as having the power — as a mere commodity — to satisfy the wants of so many people in the community that no difficulty will be encountered in passing it on to others by anyone who does not care to retain it as a commodity for his own use.

Naturally, if every successive holder of any kind of money could be assured that he could pass it on to others without loss, no one would need to hesitate to accept it for things of value, even if it were made of materials having only a negligible commodity value. But just here lies the point. Nothing will give this assurance except the ultimate power of the material of which the money is made to satisfy wants directly as a commodity. Sight is sometimes lost of the fact that it is the commodity value of gold which gives it world-wide acceptance as a medium of exchange. People are inclined to think that gold is desired just because it is money which gives its possessors the power to procure want-satisfying goods in quantity and variety limited only by the amount of the gold they possess. But this is a misunderstanding of the

true development of the use of gold as a medium of exchange. This metal came into general use as money over practically the whole world because of its utility for non-monetary purposes. It had such qualities of beauty that it satisfied the craving for personal adornment of all people who became familiar with it. It was this quality of gold, together with the fact that it possessed all the other qualities of good money, that brought it into general use as money. Naturally, after gold had come widely into use as money, the demand for it as money became the most important part of the total demand for gold and this increased its value. But to assume that gold is greatly desired merely because it is money, rather than that it first became money because it was greatly desired, is to put the cart before the horse. This point is of more than academic interest. It has considerable bearing upon the practicability of a system of ideal money such as has not infrequently been advocated.

10. IDEAL MONEY

The notion persists that some sort of money could be devised which would be merely money and nothing more, and that the quantity thereof would be more readily maintained at just the right amount in relation to the requirements of trade and commerce than such a commodity money as gold. It is observed, for example, that paper and token money are readily acceptable regardless of the fact that they have little or no value except that given them by the letters or figures stamped or printed upon them, indicating the amount of money they represent. While it is recognized that such money is ordinarily readily acceptable only because it represents a promise to pay in gold, it has been observed more than once in the history of nations that it will continue to circulate as money even when the Government which has issued it becomes unable to maintain redemption in gold, as in the case of our own greenbacks from the date of their issue to 1879. In such cases the value of this money tends to fluctuate with the quantity issued, and from this fact the proponents of ideal money reason that all that is required to make money acceptable in exchange is to regulate its quantity — a given quantity of paper money, not redeemable in gold, would have the same value, dollar for dollar, as the same quantity of gold money or other money redeemable in gold. The quantity, they say, is the thing, not the quality.

If such ideal money would actually work in practice, primary money having a commodity value equal to its face value would no longer be needed. Such ideal money would need to have no commodity value at

all. Later we shall consider in some detail the feasibility of this sort of money, but provisionally it may be stated that the scheme is to be viewed with suspicion. Both monetary history and deductive reasoning indicate that the adoption of such money would probably lead to disastrous results. We shall be on safer ground if we hold to the view that good primary money must have the quality of value in commodity form, irrespective of its use as money.

11. PORTABILITY

Good money must have the quality of portability, so that one may easily carry home for safekeeping the money received and carry to market the money to be spent in whatever quantities likely to be required in ordinary transactions. This means that the commodity used as money should have relatively great value in small bulk; that is to say, relatively great purchasing power per ounce or pound. One should be able to carry his money in his pocket and his purchases in a basket or wagon, and not vice versa. Swedish copper money of the eighteenth century, for example, lacked the quality of portability, the Swedish copper two-dollar coin of that period being seven and a half inches square and weighing three and a half pounds. This money was carried to market, not in purses, but in wheelbarrows, and must have been a source of great inconvenience. Presumably even a stout Swede must have been reluctant to accept it in considerable amounts and would have preferred payment in smaller coins of gold or silver. A lesser monstrosity in the form of a copper coin was the copper cent provided for by our own Coinage Act of 1792, weighing 264 grains, or nearly two thirds as much as our present silver dollar, which is itself an inconveniently large coin. The three-and-a-half-pound Swedish coin and the great American cent and other such monetary encumbrances are found now only in museums or in the hands of curio collectors, and even our silver dollar, a less extreme example of an inconveniently large coin, has been in large measure driven from circulation by its substitute, the silver certificate.

12. DURABILITY

It will be well to substitute for Jevons's term "indestructibility" the less exacting term of "durability," to represent our third quality required in good money. Good money needs to be merely highly durable, and not indestructible; it would, in fact, be impossible to provide a country with indestructible money, since no commodity in any particular form is indestructible. But a considerable degree of durability

weight and not by tale, will take care to export only full-weight coins. Thus, if the material of which the money is made is not durable, it will soon come about that only old and worn coins will remain in circulation unless the Government frequently calls in the money for recoinage into full-weight coins. Such recoinage would be, however, an expensive affair for the Government if it bore the loss by exchanging to all holders good new coins for old worn ones, and it would be unjust to the last holders of the old coins if the Government paid for them in new coins, not by tale, but by weight.

13. GRESHAM'S LAW

The principle that light-weight money will tend to drive out of circulation full-weight money, and that in general the less valuable will drive out of circulation the more valuable money, so long as both remain fairly acceptable in trade on a parity with one another, has long been known, and is referred to as Gresham's Law, after Sir Thomas Gresham, a royal agent of Queen Elizabeth, who pointed out the working of the law to his sovereign at a time when England was suffering from a disordered monetary system. The principle had, in fact, been known long before the time of Gresham, even as far back as the time of the ancient Greeks.

Gresham's Law, it should be noted, does not apply to such money as our subsidiary silver and minor coins, having when full weight a bullion value of only a fraction of their face value, and being at all times redeemable at their face value in gold, whether light weight or not. So one may see circulating side by side new and full-weight and old and badly worn silver, nickel, and copper coins; and if any of these disappear from circulation, it will be likely to be the oldest and worst worn withdrawn from circulation and presented at the Treasury for redemption in new coins of the same sort or in gold. At this point we are concerned with Gresham's Law only in so far as it has a bearing upon the durability of primary money. Certain other aspects of the principle will be noted in later chapters.

14. DIVISIBILITY AND HOMOGENEITY

Divisibility is an essential quality of a good medium of exchange. By divisibility is implied that quality which permits a commodity to be divided into pieces of any desired size without loss of value, and permits the pieces to be amalgamated again into an aggregate of the same value as the original mass. A good medium of exchange must have this quality of divisibility so that for articles of small value a small piece of the

money may be given and for articles of greater value a larger piece, and so that by combinations of larger and smaller pieces any desired sum may be built up. It should be emphasized that it is just as essential that the small pieces may be amalgamated into larger pieces of the same value per ounce as that the large pieces may be cut down into smaller pieces of the same value per ounce. It is only this free convertibility in both directions that will maintain the value of the large coins and the small coins on a par with one another, dollar for dollar of face value.

Closely related to the quality of divisibility is the quality of homogeneity. A substance may be said to be homogeneous when any two portions or specimens taken at random are of the same quality, so that equal weights shall at any given time and place have equal value. When all units of the medium of exchange are exactly alike, and all equal-sized fractions of the unit are alike, trade is carried on more smoothly and with greater dispatch than when the units of money vary in quality and value, since, in the first case no time need be spent by the sellers in weighing, testing, and evaluating the pieces of money used. All that is required is counting, and numberless disputes over the quality and value of the money are avoided.

15. COGNIZABILITY AND COINAGE

To be readily acceptable in exchange money must have the quality of cognizability. Unless it is readily recognized and easily distinguished from cheaper substitutes, sellers must be constantly on their guard against accepting unawares counterfeit pieces of money less valuable than the true money, and much time will be spent in scrutinizing, analyzing, or testing the money presented by buyers. Now, while gold and silver and various other metals which have been used as money have in varying degree all the qualities of good money thus far discussed — value, portability, durability, divisibility, and homogeneity — they do not have the quality of cognizability in the form of bullion in sufficient degree to serve well as money in that form. These metals do, however, have the useful characteristic of ductility, which gives them the capacity to take and retain a stamp. Advantage has been taken of this quality of gold, silver, and other metals to give them by the process of coinage a high degree of cognizability which they lack in bullion form.

A coin may be defined as a piece of metal of a definite weight and degree of purity designed to circulate as money, with both the weight and the degree of purity attested by the government stamp placed upon it. Ordinarily the stamp itself does not directly specify either the weight of the coin or the fineness of the metal from which it is made. To

determine the weight and the fineness of the metal in United States coins, for example, one must consult the coinage laws where the exact weight and composition of coins of all denominations are given.

Although the stamp itself does not give the weight and fineness of the coins, it serves several purposes. It identifies the coin by stating its denomination and the name of the country that issues it; it makes counterfeiting difficult; it tends to prevent theft of metal from the coin by clipping or sweating, and to some extent protects the coin from wear. Theft of metal is prevented because the coins are commonly stamped on both sides and milled or serrated on the edge, so that any considerable mutilation of the coins becomes at once evident, and anyone making a practice of clipping or abrading metal from coins passing through his hands would not long escape detection. It is said that the raised edge of coins to some extent reduces abrasion from ordinary wear. Incidentally, this feature of coins makes it easier to stack them in piles such as one sees at the tellers' windows in the bank.

Counterfeiting is made difficult by the process used in minting coins, the coins being made, under the best practice, by methods requiring, for perfect execution, powerful and expensive machines. The counterfeiter must then either use inferior equipment, which makes prompt detection probable, or invest such great sums in equipment that profit from the transaction is improbable even if he escapes detection for a considerable time. Governments take further precautions against counterfeiting by enacting laws providing long terms of imprisonment for persons found guilty of issuing spurious coins. As a result of the difficulties and hazards of counterfeiting, counterfeit coins are rare in countries having a good coinage system, and in the United States the danger of being imposed upon by counterfeiters is negligible. All our coins may be freely accepted without the trouble of scrutinizing closely, analyzing or testing.

16. REASONS FOR GOVERNMENT COINAGE

Although coins have in many instances been made by private individuals or by subdivisions of the Government, it has become the general practice to make coinage a monopoly of the National Government. There are various reasons for this, the primary one being to provide the country with a good and uniform coinage system. On account of the operation of Gresham's Law, coinage cannot with good results be left to private business enterprise, because in the business of coinage, the mint which produced the worst coins, and not the one which produced the best, would tend to become the most successful. It is the bad coins, and not

the good, that circulate. Even if some mints producing good coins remained in operation, their product would be in demand primarily not for general circulation but for hoarding, use as bullion, or for export. Moreover, with coins being produced by numerous concerns, it would become easier for counterfeiters to operate because there would be many minor variations in the coins struck even if the law required a certain uniformity in the various denominations and in the weight and fineness of the coins. Clearly, if there were no national regulations in respect to weight and fineness, uniformity would be lost, and business men and consumers generally would be confronted with a heterogeneous metallic currency which would make systematic bookkeeping almost impossible. Aside from the foregoing considerations, coinage would tend to be made a national monopoly because it can be made a convenient source of revenue in connection with the issue of token coins.

17. STABILITY OF VALUE

We come now to that extremely important quality of good money, stability of value. By stability of value of money is meant the quality which gives a specified unit of money, such as the dollar, constant purchasing power, or equal command over commodities at all times. By equal command over commodities at all times is not implied a condition such that the unit of money shall always exchange for the same quantity of any given commodity, as, for instance, that one dollar should always buy just one bushel of potatoes or twenty pounds of sugar, no more and no less, but rather that the average quantity of a large number of representative commodities exchangeable for the dollar shall remain the same. In other words, if the value of the standard money is stable, the average price of all commodities bought and sold will remain the same. There are many ways of calculating averages, and at this point we need not enter into the nice details of statistical averages and the relative advantages and disadvantages of the various ways of calculating them. It will suffice at present to point out that one way of finding the average prices of a number of commodities is to add all the prices together and divide the sum by the number of prices or commodities. If the average price properly calculated remains constant, it may be presumed that the value of money has also remained constant, even though some individual prices rise and some fall during the time under consideration. No money has ever been devised which has had absolute stability of value, but some kinds of money have proved to be more stable in value than others, and, therefore, from this point of view, superior.

In subsequent chapters the significance of fluctuations in the value of money and the corresponding changes in prices will be discussed in considerable detail. Here the matter will be treated only briefly. Consider first, then, the consequences of instability of value of money used as a medium of exchange. The reader should grasp clearly at the outset the simple fact that when the value of money rises, prices fall, and when the value of money falls, prices rise.

18. INSTABILITY OF THE MEDIUM OF EXCHANGE

Should the money which one has accepted in exchange fall ten per cent in value or purchasing power before one spends it, it would buy only ninety per cent as many goods as it would have bought had its value remained the same; should it rise in value ten per cent, it would buy one hundred and ten per cent as many goods as before. Since the possessor of money subject to such fluctuations ordinarily is not himself responsible for the fluctuations and has no control over them, he loses in the one case goods which it seems he ought to have a right to enjoy, and in the other case he gets an extra quantity of goods which he has done nothing to deserve. Except, however, during periods of very rapidly fluctuating prices, no very substantial changes are likely to take place in the value of money between the time a person receives it and the time he spends it, and if all prices moved up or down with a considerable degree of uniformity, the direct loss or gain resulting from fluctuations in money used as a medium of exchange would generally be a matter of no great importance.

While the direct losses or gains resulting from fluctuations in the value of a medium of exchange do not tend to be great, particularly if the changes in prices of commodities are fairly uniform, indirectly a great deal of harm may result from such fluctuations. If, for example, people observe that prices are gradually falling and the value of money consequently rising, producers and consumers alike tend in some degree to postpone buying goods longer than they otherwise would, in the expectation of getting more for their money by waiting. This tends to slow down trade, causes goods to accumulate unsold in stores and factories and on the farm, and leads to the discharge of workers and growing unemployment. Unemployment of workers cuts down their capacity to buy, thus causing further reduction in sales, further reduction in employment, and so on in a vicious circle of deepening industrial depression.

On the other hand, a persistent and marked rise in prices with a corresponding decline in the value of money tends to cause consumers and

producers to buy many things sooner than they otherwise would, since the sooner they spend their money the more they get for it. This not only discourages thrift and leads to reckless spending by consumers, but it leads to a business boom and results in overexpansion in many industries and a subsequent disastrous collapse when the rising trend in prices, which cannot go on forever, comes to an end.

19. INSTABILITY IN THE UNIT OF ACCOUNT

Thus far in this discussion of the evil results of variations in the value of money, attention has been centered on the use of unstable money as a medium of exchange. Very undesirable results flow from the instability of money also in connection with its other functions. Consider, for example, the evils that may grow out of the use of an unstable unit of account. When business men and others keep their accounts and value their property in terms of a unit of value such as our dollar, a decline in the value of the dollar to half of its former value and a general doubling of prices will tend to cause their wealth as measured in dollars to double. This doubling of wealth represents, of course, not a real increase in the physical quantity of goods they possess, but merely a counting of it in smaller units of value. Nevertheless, people who have all their lives measured their wealth in terms of money have grown so accustomed to think themselves rich or poor, as their property is worth a greater or smaller number of dollars, francs, marks, or pounds, that it seems difficult for them to realize that what has happened is not that they have grown richer or poorer, but that their unit of account has grown smaller or larger. Their thinking in this matter is the more likely to be confused by the wish becoming father of the thought. With their minds fixed upon the great increase in their wealth in terms of their familiar money, a development which appeals to their vanity, they may disregard the unpleasant fact that their real wealth has not increased and begin to spend lavishly and live beyond their means, thus dissipating a good part of their past accumulations. They are the more likely to do this because their income seems to have expanded marvelously. In the first place, their current income is likely to have increased in proportion to the rise in prices; and in the second place, they are prone to consider the annual increase in the value of their property, measured in money, as part of their real income, obviously a fallacious method of calculating income.

If, on the other hand, prices fall and the unit of value in which property and income are measured increases in size, the size of incomes and value of property measured in terms of the customary money unit shrink.

This tends to cause among the people a condition of despondency and pessimism. They cannot free their minds from the obsession that they are becoming poverty-stricken; they become parsimonious, and not an inconsiderable number in their fancied financial distress commit suicide.

20. INSTABILITY AND DEBTORS AND CREDITORS

Under certain circumstances the rise and fall in prices may bring, not merely apparent gains and losses to many individuals, but real gains and losses. Debtors, for example, who have promised to pay certain sums of money at a specified time in the future gain from a rise in prices, and their creditors lose. If a loan of \$1000, for instance, has been made payable in five years with interest at 6 per cent a year, and the price-level does not change during this period, the debtor pays back as many dollars as he borrowed and 30 per cent more in the form of interest. The creditor receives from the debtor 130 per cent as much purchasing power as he lent — and this is proper, since in terms of economic theory he lends present goods and gets back future goods, and present goods are considered more desirable than future goods.

Should prices double, however, and the value of money decline by half during the period, the interest and the principal returned to the creditor, amounting to 130 per cent of the sum lent, will have a purchasing power of only 65 per cent of the sum lent, and the creditor will have lost, not only his interest, but in effect 35 per cent of his principal. The debtor will have gained what the creditor lost, provided only he has invested the amount borrowed in property that has doubled in price during the interval of the loan. Concretely, if the debtor has bought with the \$1000 borrowed a lot which at the end of the five years can be sold for \$2000, he can pay back the principal of the debt with interest, or \$1300, and have \$700, or 35 per cent of the value of the property, left over. If the property purchased is income-producing property, he has in addition gained the income from the investment during this time.

When, on the contrary, prices fall, the debtors lose and the creditors gain, and the losses of the debtors under these circumstances may be crushing. Suppose, for instance, during an interval of five years prices fall fifty per cent. If, at the beginning of this period, many persons have gone into debt for the purpose of buying property — borrowing one dollar for every dollar they own — at the end of the period all their property combined will be worth only as much as the amount they borrowed. Their entire equity will have been wiped out and they will be financially ruined. A farmer, for instance, with \$5000 worth of land, borrows \$5000 to buy an additional piece of land, giving the creditor a mortgage

both on the land previously owned and the land just bought. At the end of five years all his land will be worth only the amount of the mortgage. And this is not all. The interest payments — a fixed amount annually, let us say 6 per cent of \$5000, or \$300 — become progressively more difficult to meet as prices of farm products gradually fall, and this increases the probability that the debtor will be unable to pay both principal and interest and that his farm will be sold at sheriff's sale to meet the demands of the creditor.

Business men who operate in part with borrowed capital, as most business men do, thus tend as debtors to gain from rising prices and to lose from falling prices. But there are other sources of loss and gain for business men in such price changes, and these will be discussed in more detail in a subsequent chapter. Here it need only be stated that during changes in the general level of prices some prices change more rapidly than others, and the tendency of some prices to lag behind others both during the rise and during the fall generally benefits business men during the rise and proves detrimental and often ruinous to them during the fall.

Enough has now been said to show that, if confusion, waste, and injustice are to be avoided, the value of money should be stable. If absolute stability in the value of money cannot in the nature of things be had, then we should choose as standard money some commodity that has a very high degree of stability of value, provided it has also the other requisite qualities of good money.

21. QUALITIES OF A GOOD MEDIUM OF EXCHANGE AND STANDARD OF VALUE SEPARATELY CONSIDERED

In the foregoing discussion of the qualities of good money it has been assumed that the money under consideration is to serve both the fundamental purposes of money, as a medium of exchange and as a standard or measure of value, with the related functions of unit of account and standard of deferred payment. While a complete separation of the two fundamental functions of money does not seem practicable, so that one kind of money may serve exclusively as a medium of exchange, while another kind may serve exclusively as a standard of value, yet a considerable measure of separation has actually been achieved in the United States and in other countries. Our paper, silver, nickel, and copper money, for instance, is the money which actually circulates and serves directly as a medium of exchange, while gold has in recent years rarely been used directly for this purpose. On the other hand, gold money has long been our true standard and measure of value, and in so far as these other kinds of money have been used to measure value, it has usually

been only as they have represented promises to pay in gold, dollar for dollar.

Since in the case of representative, token, and credit money the value lies, not in the material of which the money is made, but in the promise to pay gold which it represents, it is immaterial whether money of these kinds has stability of value merely as a commodity, or even any value at all. Neither are the qualities of durability and homogeneity of essential importance in paper money and token coins. It is desirable, however, that the token coins be durable merely as a matter of convenience and economy in maintaining this part of the currency in good condition. They should have the qualities of portability and cognizability, and cognizability implies a high degree of uniformity in appearance. As for the paper money, it should be printed on conveniently small pieces of paper to enhance its portability, and bills of the same denomination and type should be uniform in appearance, while bills of different denominations should be clearly distinguished from one another by the symbols, figures, and pictures printed upon them, and all bills should be printed or engraved by processes difficult to duplicate. In this way mistakes in counting are reduced to a minimum and counterfeiting is rendered most difficult. Pronounced dissimilarity between the appearance of small bills and large bills tends to increase the hazards of the ambitious artist who undertakes to transform one-dollar bills into ten-dollar bills, and to produce other like profitable changes in denominations.

If the standard money of the country is not to serve, except in a very limited way, as an actual medium of exchange, but is to remain for the most part locked up as a reserve in bank vaults and the Government Treasury, its only essential qualities are utility and value, stability of value, durability in the sense that it does not deteriorate while lying idle in the vaults, and homogeneity. It would not need to be readily portable, or durable enough to resist wear and tear of actual circulation, and it would not need to have a high degree of cognizability. Divisibility would probably be desirable but not essential. Since, however, no convincing evidence has yet been produced to prove that the standard money may be used exclusively merely as a reserve and need not be a potential circulating medium, it will be well to proceed on the assumption that the primary money of the country should be made of a commodity that has all the qualities of good money — the qualities essential to a good measure of value as well as those essential to a good medium of exchange.

CHAPTER III

THE CHOICE OF MONEY

1. THE QUALITIES OF GOLD AND SILVER

GOLD and silver have all the qualities of good money in larger measure than any other readily available commodity, and they are, therefore, the commodities most suitable for use as primary money. This fact has been so generally recognized that these two metals have been used as primary money by more people and over a longer period of time than any other commodity.

The utility of gold and silver for non-monetary purposes is derived mainly from their unusual beauty. Because of their luster and sheen, they have been in great demand for purposes of adornment in all ages and in most parts of the world. Men and women almost universally delight in decking their persons with beautiful trinkets made of these metals. Moreover, people have always taken pleasure in adorning not only their persons but their homes as well with gold and silver, as is indicated by the extensive use of gold and silver plate, silver knives and forks and other tableware, and by gold-encrusted furniture, gilded domes, and other such trappings of political potentates and industrial magnates. No one seems to be too old or too young, too rich or too poor, too barbarous or too refined to feel a desire for gold or silver trinkets of some kind. So great has been the demand and so limited the supply of these metals that they have always represented great value in small bulk, and have, therefore, come to be referred to as the precious metals. Having great value in small bulk, money made of these metals has the desirable quality of portability.

The unusual durability of gold and silver is the result of their resistance to chemical changes induced by exposure to the atmosphere. Gold will neither rot nor rust, and silver, while it quickly tarnishes, develops a dark protective covering of silver sulphide which effectively prevents further deterioration. Gold and silver do not, indeed, have that degree of durability denoted by the word "indestructibility" used by Jevons in his enumeration of the qualities of good money. On the contrary, owing to their softness when pure, they are readily susceptible to abrasion and resist wear from friction less effectively than some other metals. But by being mixed with copper or other alloy they can be hardened to such a degree that they may be used as coins in active circulation for

many years without substantial loss in weight. Gold and silver coins have actually lasted for hundreds of years with ordinary usage, becoming thin and light, however, in the course of time. Locked up in vaults, gold and silver coins will suffer no substantial change in thousands of years.

Gold and silver are homogeneous when pure. That is to say, an ounce of pure gold or silver is just like any other ounce no matter when or where produced. Their homogeneity need not be destroyed when they are alloyed with copper to harden them, since copper itself is homogeneous when pure.

Both gold and silver have the quality of divisibility, so that an ounce, for example, can be cut into twenty pieces without loss of value, and the twenty pieces can be amalgamated into a whole of the same value as the original mass. Finally, both gold and silver have unusual stability of value during short periods of time, although over a long period of years they may develop marked instability of value.

2. STABILITY OF GOLD AND SILVER OVER SHORT PERIODS

During relatively short periods of time — let us say arbitrarily over periods of not more than ten to twenty years — gold and silver ordinarily have greater stability of value than most other commodities. Over longer periods they sometimes display rather marked instability. At this point it will not be convenient to discuss in detail the complicated subject of the value of gold and silver when used as money, but the fundamental causes of their comparative stability of value during short periods and their occasional lack of it over long periods may be briefly indicated.

Aside from their use as money, gold and silver are commodities, the value of which tends to rise when the supply becomes relatively small and to fall when the supply becomes relatively great — in relation, that is, to the supply of other commodities in terms of which their value is measured. By supply we must understand the total world supply; because of the ready portability of these metals and the small expense of shipment, the supply tends to shift quickly from one part of the world to another, going to that quarter of the world in which its value is greatest. But fluctuations in the total supply of gold or silver cannot be relatively great during a short period of time. This is true because the total supply available at any given time represents the accumulation of hundreds of years. Whether used as money or for adornment or merely hoarded in bullion form (and relatively little gold or silver is used in other ways), these metals are exceedingly durable, and only a small pro-

portion of the amount annually produced wears away and disappears during the year. Each year the existing stock grows larger, and the existing stock is many times the quantity annually produced. For example, the total gold production of the world in 1932 amounted to \$490,259,000, while the gold reserves of central banks and governments in forty-nine countries in December, 1932, amounted to \$11,897,000,000, a figure which may be considered to represent a very large proportion of the world's total gold monetary stock, but which does not include, of course, gold held by private individuals in the form of coin or bullion, or the immense amount of gold in the form of jewelry, plate, and so on, owned by the world's 1,800,000,000 people. These gold reserves alone, leaving out of consideration all the rest of the gold stock of the world, amounted to more than twenty-four times the total world production in 1932; and production in that year was the greatest on record, far in excess of the average annual production in the earlier years of the present century.

With the annual production of gold amounting thus to only a small percentage of the total world supply, it is obvious that no great and sudden increase in the total supply can occur except in the unlikely event that exceedingly productive new gold deposits should be discovered or that scientists should discover commercially feasible methods of transmuting baser metals or other elements into gold. With annual production at present equivalent to about four per cent of the total gold reserves of the world, doubling total production for one year would make these gold reserves only four per cent larger than they would be with production remaining the same, even if the total increase in the amount produced should be added to the monetary stocks and none of it should be used in the arts. Likewise, a decline in production of fifty per cent in one year would produce hardly a perceptible degree of scarcity — a fifty per cent decline in total production would make the total monetary stocks only two per cent smaller than they otherwise would be. Bearing these facts in mind, it is clear that in the very nature of things no great and sudden change can occur in the value of gold through a sudden change in the total supply.

It does not follow that the value of gold may not be subject to sudden and marked fluctuations. Value is a function of two variables — supply and demand. Should demand suddenly change, value will change even though supply remains the same. Ordinarily, however, there are no great and sudden changes in the demand for gold. The demand for it tends to increase gradually with the increase in the population and the wealth of the world, and this applies to the demand for both monetary

and non-monetary purposes. This gradual increase in demand tends to counteract the effect of the gradual increase in the total supply, and if demand and supply should increase at the same rate, no change in value would occur. Normally, then, there are likely to be sharp fluctuations in neither demand nor supply, and consequently no sharp changes in the value of gold.

While the foregoing considerations apply primarily to gold, similar considerations apply to silver. Here, too, the annual production is only a small percentage of the total accumulated supply, and here, too, there tends to be a gradual increase in both the supply and demand, with no sharp changes in either total demand or total supply normally possible, and hence no sharp and sudden changes in value.

But there are, unfortunately, abnormal situations so affecting supply and demand as to bring great variations in the value of both gold and silver in relatively short periods of time—that is, within a period of, let us say, from one to five years. These abnormal situations have practically always arisen out of changes in the monetary policies of governments or out of unsound banking policies.

3. INSTABILITY ARISING FROM GOVERNMENT POLICY

When great quantities of paper money are issued in any country and placed in circulation to supplement the primary money in circulation, the effect on the value of the primary money and on prices is practically the same as if an equal amount of primary money had been placed in circulation, provided only the amount of paper money is not so excessive as to prevent its redemption in primary money on demand either at the banks or at the Government Treasury. Prices in that country will tend to rise, and the value of gold, if gold is the primary money, will tend to fall. When just one country issues paper money in this way, bringing about a rise in prices, while other countries do not issue paper money and experience no similar rise in prices, gold will flow from the country where prices are high and its value is low to other countries in which prices are low and its value high. Without undertaking here a discussion of the mechanism of foreign trade and foreign exchange, it may be provisionally stated that the outflow of gold will be the result of an unfavorable balance of trade of that country — its high prices attracting imports of goods from other countries and preventing exports in large measure. Thus, imports will tend to exceed exports, and the excess of the value of imports over the value of exports will tend to be paid in gold. Thus, gold will gradually be expelled from the country. But the more gold this country loses in this way, the more gold other countries

will have, and so the gold supply of other countries will increase, prices there will tend to rise, and the value of gold will tend to fall.

If a considerable number of countries issue immoderate quantities of paper money at the same time, gold will flow in large quantities to other countries and cause a sharp rise in prices even in those countries which have not issued paper money. If all countries in the world increase the amount of paper money in circulation greatly within a period of a few years, there will naturally be a sharp rise in prices and decline in the value of gold. The decline in the value of gold will tend to take place whether or not the paper money remains redeemable in gold. If it remains redeemable in gold, it represents in effect an increase in the quantity of gold available for monetary purposes equal to the amount of paper money issued, less the amount of gold locked up in bank vaults or government treasuries as a reserve to assure redemption. It reduces the value of gold in somewhat the same way as the extensive use of rayon tends to reduce the value of silk or cotton whose use it supplements or displaces. If the issue of paper money is so immoderate that it does not remain redeemable in gold, and if it is made legal tender, it practically destroys the use of gold for ordinary monetary purposes, and by thus reducing the demand for gold may cause a decline in its value as a commodity.

After the outbreak of the World War, gold was more or less informally demonetized in many countries by the immoderate issue of paper money. In other countries, including the United States, it accumulated in abnormal quantities and suffered a sharp decline in value. After 1929, the value of gold rapidly increased as a result of financial disturbances having no direct relation to the normal demand and supply of that metal. Discussion of this recent change in the value of gold must be postponed to a later chapter.

The value of silver has likewise been greatly affected by changes in monetary policies of nations, but in a different way. The decline in the value of silver has resulted primarily from the demonetization of silver in all the important countries of the world except China. As we shall note in more detail in later pages, one by one the countries of the world during the nineteenth century closed their mints to the free coinage of silver, and thereby destroyed the demand for silver in the form of primary or standard money, this movement having started with the demonetization of silver by England in 1816 and having proceeded with great rapidity after 1873. Naturally, when one of the important sources of demand for a commodity is destroyed, not only in one country but in many countries, by government decree, we may expect a sharp de-

cline in its value, whatever that commodity may be. On the subject of changes in the value of gold and silver and the causes thereof much remains to be said in this volume, but the foregoing discussion should be sufficient to show that great and sudden changes in the value of these metals must be attributed, not to normal changes in supply or demand, but to arbitrary political action. It follows, therefore, that attacks upon gold or silver as primary money, based on their alleged instability of value, might with propriety and good results be diverted to the arbitrary and often ill-advised actions of governments which will almost invariably be found to be the main cause of the trouble.

4. INSTABILITY OF GOLD AND SILVER OVER LONG PERIODS

While great changes in the value of gold and silver occurring within a period of a few years may nearly always be traced to arbitrary actions of government, the same cannot be said of changes in the value of these metals over a longer period of time. During an interval of twenty or thirty years or more great changes may occur in the value of either gold or silver as a direct result of the annual rate of production. If the annual production of gold, for example, becomes so great that the annual addition to the total supply is relatively greater than the annual increase in the production of other less durable commodities, such as wheat, corn, cotton, iron and steel, then gold becomes progressively more and more abundant with relation to these other goods, and its value in terms of these other commodities falls. Suppose that the annual production of gold is at the rate of 4 per cent of the total stock, and that 1 per cent is used in the arts or lost, while the other 3 per cent accumulates from year to year as an addition to the total stock. Then in approximately 23 years the total gold stocks will have doubled, as will also, by hypothesis, the annual production which remains at 4 per cent of the total stocks. If now the annual increase in the physical volume of production and in trade and industry in general is also at the rate of 3 per cent a year, the value of gold tends to remain constant. But if the annual rate of gold production should increase by virtue of the discovery of richer mines or more economical methods of gold mining, so that the increase in stock should be at the rate of 3 per cent in six months while the physical volume of trade and industry increased as before at the rate of only 3 per cent a year, then the gold stocks would quadruple in 23 years, while trade and industry would only double. Gold would in 23 years have become twice as abundant as before in relation to other commodities, and its value would have fallen sharply. According to the quantity theory of money, to be discussed later, it would have tended to fall 50 per cent in value under these conditions.

It should be observed that this increase in the rate of production from an amount that added 3 per cent a year to a rate that added 3 per cent in six months to the total stock would have no immediate great effect on the value of gold such as would a sudden doubling of the rate of production of such less durable commodities as wheat, corn, or cotton. In the case of such commodities, the total output of which tends to be consumed each year, doubling the annual output would approximately double the supply available, whereas in the case of gold, doubling the output available for monetary use in some given year, so that it would become 6 per cent of the total supply instead of 3 per cent, would increase the total supply available by only 6 per cent instead of 3 per cent. But if the increased rate of output is continued, the effect is cumulative. That is to say, the great durability of gold which makes the annual output represent but a small percentage of total stocks in existence, while it acts as a stabilizer of the value of gold over short periods, reverses its action over long periods and becomes a cause of instability.

If the production of gold declines, so that the increase in total stocks falls to a rate of 3 per cent in two years, while the physical volume of production and trade in general continues to increase at the rate of 3 per cent in one year, then gold becomes relatively more and more scarce. It will take 46 years now for the total supply to double, while during this interval the physical volume of production and trade in general will have quadrupled. Gold will be only half as abundant with relation to other commodities as before, and its value will have risen sharply. Prices will have fallen. According to the quantity theory of money prices would have tended to fall 50 per cent. What applies to gold used as primary money would apply also, for the same reasons, to silver.

5. WHY GOLD MONEY IS NOT USED EXCLUSIVELY

When the qualities of other commodities are compared with those of gold and silver, the truth of the statement made in the first sentence of this chapter, that these two metals possess the qualities of good money in greater measure than any other available commodity, becomes quickly apparent. Wheat, for example, which has at times been used as money and whose use as primary money has comparatively recently been urged by a captain of industry, is deficient in several qualities. It does not possess a sufficient degree of portability, durability, homogeneity, and stability of value, although it does possess utility, divisibility, and cognizability. Similar shortcomings might be pointed out in any commodity that can be named. Next to gold and silver, certain other metals, such as copper, nickel, aluminum, or platinum, would make the

8. THE MEANING OF BIMETALLISM

Bimetallism, as the term is generally understood, implies a monetary system under which both gold and silver are subject to free coinage and both are given full legal-tender powers. In other words, under bimetallism anyone has the privilege of taking either gold or silver to the mint to be exchanged, ounce for ounce or pound for pound, for gold or silver coins, provided only that the bullion presented at the mint is of the same degree of fineness as the coins to be minted from it. A small charge may be made to cover the cost of coinage, including the cost of any alloy that may be added to the gold or silver, such a charge representing a negligible fraction of the value of the coins struck. This mint charge must be a negligible fraction of the value of the coins, since the essence of free coinage is the parity between the value of the coins and the metal from which they are made, and this parity would be destroyed by a substantial mint charge. If no mint charge at all is made, coinage is said, to be not only free, but gratuitous. Gratuitous coinage of both metals is not essential to bimetallism, but free coinage is.

With two kinds of standard money, gold and silver, the unit of value is a legally fixed quantity of gold on the one hand, or a legally fixed quantity of silver on the other. Debtors, having money obligations to meet, may, in the absence of a contract made in advance to the contrary, pay at their option in either gold or silver units of the size fixed by law.

Since under bimetallism neither the gold nor silver coins can have a value greater than the value of the metal from which they are made, and since it is the intention of the Government to make the gold and the silver units equal in value, the gold coins must be smaller in size than the silver coins of the same denominations, the difference in size being determined by the difference in market value of the two metals. If, for example, an ounce of gold is worth as much as fifteen ounces of silver on the metal market — that is to say, if that is the rate at which the two metals will be exchanged in bullion form for other than monetary uses — then silver coins of a given denomination must be made to contain fifteen times as much silver as gold coins of the same denomination contain of gold.

The ratio between the weight of the silver coin and the gold coin of the same denomination is called the mint ratio, while the ratio at which the two metals in bullion form exchange on the metal market is called the market ratio. These two ratios must be the same if bimetallism is to work in practice.

9. THE MINT AND MARKET RATIOS AND GRESHAM'S LAW

Suppose that a country adopts bimetallism and fixes the mint ratio at 15 to 1 while the market ratio is 16 to 1, and that the two standard units of value are called the gold dollar and the silver dollar. The silver dollar will then weigh fifteen times as much as the gold dollar, and fifteen ounces of silver coins will be worth as much for debt-paying purposes and for most other commercial transactions as one ounce of gold coins. But on the metal market it will take sixteen ounces of silver bullion to equal in value one ounce of gold bullion. Under these circumstances no intelligent person will take gold to the mint to be coined, except for some special purpose, such as to get the government stamp upon it to prove its weight and fineness as a preliminary to its export or sale as bullion. If the owner of gold bullion has no such special use for gold coin, but wants money for ordinary commercial purposes or to pay debts, it will pay him well to trade the gold for silver on the market at the rate of one ounce of gold for sixteen ounces of silver, and to take the silver rather than the gold to the mint for coinage. The one ounce of gold would produce no more dollars at the mint than fifteen ounces of silver, but sixteen ounces of silver would produce one fifteenth more dollars than fifteen ounces of silver. Somewhat differently stated, enough gold to produce \$15,000 in gold coins could be traded on the market for enough silver to produce \$16,000 in silver coins, a profitable trade when one bears in mind that the legal-tender power of the silver dollar would tend to make it worth as much for monetary purposes as the gold dollar. At this point the reader may be puzzled as to why anyone would trade silver enough to make \$16,000 for gold that would make only \$15,000. The answer is, that one who thus trades silver for gold wants, not *dollars*, but *gold* to be used for *non-monetary purposes*.

But this is not the whole story. If any gold should be coined under these circumstances and placed in circulation, the gold coins would soon be collected by bargain hunters, melted down and traded for silver on the metal market or exported. It would, in short, be impossible to retain gold coins in circulation with the mint ratio below the market ratio. Gresham's Law would apply — the cheap money would drive the dear money out of circulation. Valued in terms of gold bullion, the silver dollar under the circumstances here assumed would be worth only fifteen sixteenths as much as the gold dollar. The silver dollars would be the cheap or bad money and the gold dollars would be the dear or good money. Silver under these conditions would be spoken of as the overvalued metal and gold as the undervalued metal; the metal overvalued at the mint drives the metal undervalued at the mint out of circulation.

If the situation should be reversed and gold overvalued at the mint, while silver were undervalued, gold would drive silver out of circulation. If, for example, the mint ratio were fixed at 16 to 1, while the market ratio stood at 15 to 1, then it would take sixteen ounces of silver to make as many dollars as one ounce of gold, but on the market, at the rate of 15 to 1, sixteen ounces of silver would exchange for one and one fifteenth ounces of gold. By trading his silver bullion for gold and taking the gold instead of the silver to the mint, the metal owner would gain a fifteenth. As in the case of gold before, now in the case of silver, any coins that had been placed in circulation would be collected and either exported or melted down into bullion. So long as the mint ratio remained above the market ratio, silver coins of full weight could not be retained in circulation. It hardly needs to be added that when the mint ratio and the market ratio thus vary, and one or the other of the two metals is driven from circulation, bimetallism, although legally in existence, is merely a legal fiction. It has no real existence. The primary and standard money is that one of the two metals which is overvalued at the mint.

10. THE FUNDAMENTAL WEAKNESS OF BIMETALLISM

It is the fundamental weakness of bimetallism that the equality between the mint ratio and the market ratio which is essential to its successful operation cannot in the nature of things be maintained except through such international co-operation in monetary matters as the world has never yet seen. Consider why this is so. The market ratio is a fluctuating ratio, moving up and down with changes in the demand and supply of gold and silver. Any one of four distinct factors, be it noted, may cause a change in the relative value of the two metals, namely, a change in the demand for gold, a change in the demand for silver, a change in the supply of gold, and a change in the supply of silver. Moreover, a change in any one of these four determinants of the relative value of gold and silver is the resultant of numerous forces each of which in turn may be the resultant of still other forces, so that it is naturally to be expected that the market ratio thus acted upon by multitudinous forces must be constantly subject to fluctuations. Although these fluctuations are not likely to be great during a short period of time because of the relative stability of value of both gold and silver, they are likely to be frequent at all times and may become very great over long periods, and it will take very powerful counteracting forces to hold them in check. Now, while the market ratio in the nature of things thus dances up and down, the mint ratio remains relatively constant

because it is the result of deliberate legislative and executive action and cannot be changed as often and exactly in the same degree as the unstable market ratio.

It follows, therefore, that a government which undertakes to establish bimetallism at a fixed mint ratio will quickly find the mint ratio out of harmony with the market ratio, even if the two were identical at the time bimetallism was established. One metal will be overvalued at the mint and will drive the other out of circulation. Instead of having two standards of value and two kinds of primary money, the country will have only one, and that will be the overvalued metal. It should be emphasized that no such substantial difference between the mint and the market ratio as the difference between 15 to 1 and 16 to 1 is required to bring about the expulsion of the undervalued metal from circulation. A difference between the two ratios one half, or even one tenth as great as this will bring the same result. Naturally, if a country undertakes to establish bimetallism with the mint ratio at the very beginning differing from the market ratio, the bimetallic system will be a failure from the beginning. The truth of this statement can be supported by our own monetary history, as will be seen in a later chapter. There is only one force powerful enough to counteract the tendency for the market ratio of the value of gold and silver to fluctuate and that is the so-called compensatory action which can be made effective only by practically world-wide international co-operation.

11. THE COMPENSATORY ACTION

The theory of the compensatory action of gold and silver under bimetallism can be explained most conveniently by assuming to begin with that some important country, let us say, to illustrate the point, the United States, has adopted the bimetallic system with a mint ratio equal to the market ratio, and that it actually has in circulation some hundreds of millions of dollars in both gold and silver coin. Suppose the mint ratio and the market ratio are both 16 to 1. If now the market ratio rises to 16.25 to 1, gold becomes undervalued at the mint and will cease being presented for coinage; moreover, gold coins will be melted down and brought to the market to be traded for silver, which will then be carried to the mint in larger quantities than before. Gold thus becomes relatively more abundant and silver relatively less abundant on the market than before. Gold becomes more abundant because much gold which would otherwise have gone to the mint now remains on the metal market and much gold which has been circulating as money is brought to the metal market. Silver becomes less abundant because

much silver which otherwise would have remained on the metal market is traded for gold and carried to the mint. The greater relative abundance of gold and the greater relative scarcity of silver on the market tend to reduce the market ratio below 16.25. This flow of silver from the market to the mint and of gold from the mint to the market is the compensatory action that will continue to operate, unless checked or counteracted by other forces, until the market ratio is brought back once more to the mint ratio.

Consider now the factors which might check or counteract the compensatory action. The metal market is a world market, and the market ratio between gold and silver is a ratio that is determined by the relation between the demand and supply of gold and silver over the whole world. The ratio in one country cannot differ much from the ratio in another, since transportation costs for many thousands of miles represent a negligible fraction of the value of both gold and silver, not in excess of one half per cent in most cases, and since normally there are no tariff barriers erected to impede the free transfer of these metals. If, therefore, at any mint in the world silver is worth more in terms of gold than on the market, silver from the whole world market will tend to flow to that mint, and gold coin will tend to flow from that country to be exchanged directly or indirectly for silver from all parts of the world. In short, the compensatory action, to be effective, must restore the world market ratio and not merely the market ratio of the United States to its former level of 16 to 1. Whether or not it would have the power to do this would depend upon two primary factors, namely, the quantity of gold in circulation and in the bank reserves in this country when the market ratio rose above the mint ratio, and the quantity of silver which would become available in the world to be exchanged for gold at a ratio above 16 to 1.

Obviously, if silver should keep pouring in and the market ratio should remain above the mint ratio until all the gold had been expelled from circulation in the United States, the compensatory action would cease to operate. The market ratio, unless acted upon by some other force, would remain above the mint ratio, gold would remain out of circulation, and the country would have but one kind of standard and primary money — silver. It need now only be added that usually the total amount of gold in circulation or in the bank reserves of any one country is such a small part of the total gold stock of the world, and so small relatively also to the total amount of silver stocks plus current production of silver, that in the normal course of events the gold would be expelled from circulation before the compensatory action had equalized mint and market ratio.

Generally speaking, it is safe to conclude that no one country, acting alone and without co-operation of other countries, can establish and successfully maintain in operation a bimetallic system, even if at the time the system is established it fixes the mint ratio at the market ratio. Still less is it to be expected that such a system could be made to work if the country in question undertakes to set up a bimetallic system with the mint ratio to begin with only half as great as the market ratio; when it undertakes to establish bimetallism with a mint ratio of 16 to 1, for example, when the market ratio is 32 to 1, the plan that was advocated for the United States by William J. Bryan and his followers in the political campaigns of 1896 and 1900. In such a case there could be but one result. The compensatory action would have exhausted its powers long before the market ratio fell from 32 to 1 to 16 to 1, and the country would have, not a double standard of gold and silver, but the silver standard pure and simple. Incidentally, the Bryan plan, if put into operation, would have accomplished its real purpose, which was not to provide the country with a double standard of gold and silver, but to give us cheaper money and higher prices by substituting a silver dollar of 371.25 grains for a gold dollar of 23.22 grains.

12. INTERNATIONAL BIMETALLISM ECONOMICALLY FEASIBLE

While it is practically certain that no one country acting alone can successfully establish and maintain the bimetallic system, it seems just as certain that all the important countries of the world acting in concert could establish and maintain a system of international bimetallism, provided only that they would fix the mint ratio, which would need to be the same for all the countries co-operating, not too far above the market ratio at the beginning. Under such a system the compensatory action would operate as a powerful force and would in all probability keep the market ratio in harmony with the international mint ratio. The situation would be radically different from the one just considered when one nation alone embarked upon the bimetallic scheme. Under international bimetallism, if the market ratio of silver to gold rose above the mint ratio, the flow of silver would be toward all the mints in the world, and would not be concentrated upon one mint alone, and the compensatory action would operate until all the gold had been expelled from circulation, not in one country, but in all countries. This would imply, naturally, that there would be ultimately only one outlet for the gold expelled from circulation, and that would be the bullion market. The export outlet would not be available because gold cannot be exported from all countries at the same time in larger quantities than it

never been possible to obtain the degree of political co-operation necessary to establish international bimetallism. If, however, it could be shown to be extremely desirable such political action might conceivably be achieved. It remains to consider on what grounds, if at all, international bimetallism is to be advocated as desirable.

13. THE ARGUMENT IN FAVOR OF INTERNATIONAL BIMETALLISM

The most substantial argument in favor of international bimetallism is that it is more conducive to stability of prices than either the gold standard or the silver standard. As has been stated, the value of both gold and silver tends to be stable over short periods of time, being subject to many minor variations, perhaps, but to no great variations except through some abnormal act of governments, such as the issue of great quantities of paper money or the demonetization of one or the other of the two metals. Over long periods of time, however, the value of either gold or silver may fluctuate violently as the result of the cumulative effects of a sharp increase or decrease in the annual rate of production relative to the rate of production of commodities in general. When gold is used as the single standard of value, these great variations in the value of gold will have their counterpart in equally great variations in prices, since, when prices are measured in terms of gold, a rise in the value of gold means a corresponding fall in prices, and a fall in the value of gold a corresponding rise in prices. Similarly, if silver is the single standard of value, changes in the value of silver growing out of its relative abundance or scarcity have their counterpart in corresponding changes in prices.

But under an effective bimetallic system, the value of gold and the value of silver are tied together by the compensatory action. If gold production increases sharply while the production of silver shows no similar change, the market ratio will tend to fall below the mint ratio. Gold then, being worth more at the mint than at the market, will flow to the mint, and silver will tend to flow out of circulation into the market. As a result the market ratio of gold to silver will tend to be maintained close to the mint ratio. Both gold and silver will, however, be more abundant on the market than before, and both will fall in value with relation to other commodities. But the decline in the value of each will be less than would have been the decline of gold alone if part of the increased gold supply had not been used up in displacing silver from circulation as money. Similar reasoning would apply if there had been an increase in the production of silver and not of gold, or if there had been a decline in the production of gold or of silver. In

all cases both metals in terms of other commodities would rise or fall in value, together, and the extent of their rise or fall in value would be determined, not by the increase or decrease in the supply of each individually, but of the average increase or decrease in the supply of both combined.

It is highly improbable that the rate of increase or decrease in the supply of both the metals combined would be as great as the rate of increase or decrease in either one alone. This is because the rate of production of one might increase sharply at one time, while the rate of production of the other would increase at some other time, and the rate of production of one might often increase while that of the other declined. It follows, therefore, that under bimetallism the value of neither metal would fluctuate as widely as would the value of either one which might be used as primary money under a mono-metallie system. If, then, the value of gold and silver under bimetallism could not fluctuate as widely as the value of either gold or silver used as single standard primary money, it follows that under bimetallism prices would necessarily be more stable than under either the single gold standard or under the single silver standard.

The foregoing reasoning has been used to prove, without recourse to the quantity theory of money, that prices would be more stable under bimetallism than under mono-metallism. If the doctrine that prices tend to vary directly with the quantity of money in circulation is accepted and stripped of the complications that arise from the use of other than primary money and the use of bank credit, then we may present the argument in favor of bimetallism even more simply. If only gold is used as primary money, the amount of money in circulation and the level of prices will tend to fluctuate with the total gold stocks of the world. If only silver is used as primary money, the amount of money in circulation and the level of prices will tend to fluctuate with the total silver stocks of the world. But under bimetallism, the total amount of money in circulation and the level of prices will fluctuate with the total combined stocks of gold and silver. And the combined stocks of gold and silver will fluctuate less rapidly than the stocks of either one of the metals alone. Hence, if the quantity theory of money is accepted in its simplest form as given above, the superiority of bimetallism over mono-metallism must also be accepted, provided stability of prices is considered more desirable than instability of prices. Our conclusion would not be materially changed if it were based upon the quantity theory of money in the more complex and realistic form discussed in a later chapter. While international bimetallism may

thus be advocated in the interest of stability of prices, it is worth noting that the restoration of bimetallism in the United States since it came to an end in 1873 has most commonly been urged as a means of raising prices.

14. STATISTICS SUPPORT THE ABSTRACT ARGUMENT IN FAVOR OF BIMETALLISM

Before passing on from this phase of the discussion it might be well to answer some objections that might be raised to the conclusion which has just been reached, that international bimetallism is economically feasible and politically desirable. Its desirability, as stated, depends upon its capacity to produce substantially greater stability of prices than either the gold standard or the silver standard alone, and this capacity in turn depends upon the fluctuation in the rate of production of gold and silver. If statistics of gold and silver production should indicate that the production of both metals fluctuated at about the same rate in the same direction, then bimetallism would yield no greater stability of prices than mono-metallism, and if this were the case the best argument in favor of bimetallism would fall to the ground. This is, however, not the case. Changes in the rate of production of gold have varied widely, not only in amount, but sometimes in direction, from changes in the production of silver. For example, the average annual production of gold increased from 652,201 fine ounces in the ten-year period, 1831 to 1840, to an annual average of 6,447,793 fine ounces in the ten-year period, 1851 to 1860, almost a tenfold increase. During the same period the average annual production of silver increased only from 19,175,867 ounces to 28,792,013 ounces, or about fifty per cent. Again, from the decade of 1881 to 1890, to the decade 1911 to 1920, the production of gold increased fourfold, while the output of silver less than doubled. On the other hand, from the decade of 1851 to 1860 to the decade of 1881 to 1890 the output of gold actually declined, while the production of silver rose from an annual average of 28,792,013 ounces to 100,457,688 ounces. The demonstration on this point is impressive and could be reinforced by further statistics of gold and silver production.

There is, however, another point that needs to be considered in this connection. If it could be shown statistically that either gold or silver alone has been produced in such quantities that the total stock of it available for monetary use increased at a more even pace with the expansion in world production and trade than the total stock of both silver and gold combined, then that one metal used as a single standard

of value would be more conducive to stability of prices than the bimetallic system. On this point statistics of gold and silver production are not so clear as on the first point. During the period from 1830 to 1920, however, a period when the subject of bimetalism was widely debated and often a political issue, the statistics of gold and silver production indicate that international bimetalism would have given better results in respect to stability of prices than either the gold or silver standard alone. From 1850 to 1870 gold production outran the general expansion in trade and industry, and again from around 1895 to 1915, while during the period from around 1870 to 1895 gold production did not keep pace with industry and trade in general. The result was first a rise in general prices, then a fall, and then another rise in terms of gold money — silver having been widely demonetized at the period beginning in the seventies. During this period, 1870 to 1895, the production of silver rose rapidly, more in line with the general expansion of trade and industry than the production of gold. On the whole, production statistics support the abstract argument in favor of international bimetalism.

But there is a second objection that might be raised to bimetalism. Suppose that the production of silver should become so great by virtue of the discovery of rich deposits of silver or of improved processes of working low-grade ores that the market ratio would rise persistently above the mint ratio until all the gold were expelled from circulation, and that then silver should still keep on pouring into the mints and the market from the mines until the market ratio rose far above the mint ratio. The compensatory action would have exhausted its powers when all the gold had been expelled, and bimetalism would have come, at least temporarily, to an end. Moreover, if an attempt should be made under these circumstances to restore bimetalism by raising the mint ratio up to the market ratio in order to bring gold back into circulation, the results might be very undesirable. Under the circumstances assumed, silver would have become so cheap in terms of other commodities that it would no longer have great value in small bulk, would not be portable, and would make poor primary money. It would be better to abandon silver as money and use gold alone. To this objection there can be no answer other than that such a great increase in the production of silver is highly improbable. It should be borne in mind that before all the gold now held in bank reserves and government treasuries and in active circulation could be forced on the bullion market, the value of gold as a commodity would have become badly depressed and the cost of producing silver would have had to fall very low indeed to

keep it pouring in from the mines in such quantities as to force the market ratio above the mint ratio of say 32 to 1. It should not be forgotten that during this process of gold expulsion prices in terms of both gold and silver money would have been rising and the money cost of mining silver would have shown a tendency to increase.

If, however, silver should be produced in such great quantities as to bring these things to pass, the consequences would be serious. There would first be a great rise in prices with all the demoralizing consequences of such a rise, and then, if silver had to be abandoned in favor of gold because of its extreme depreciation in value, there would be a sharp fall in prices bringing ruinous results to industry and trade. All these possibilities are, however, very remote, whereas the reasoning pointing to the desirability of international bimetallism is based upon statistical facts and the principles of mathematics.

Brushing aside, then, these objections to international bimetallism, we may hold to the conclusion already reached that international bimetallism represents a desirable monetary system which it would be well for all advanced nations to co-operate in establishing. It is well, however, to be under no illusions as to the ease with which such co-operation may be achieved, and to go upon the assumption that, since all attempts to agree upon such matters have failed in the past, they are likely to fail in the future. In the absence of international bimetallism, what sort of monetary system becomes the most desirable for a government, acting alone, to establish, bimetallism under these circumstances being ruled out as not feasible?

15. CHOOSING BETWEEN GOLD AND SILVER

In choosing between gold and silver, it will be well for any particular country to select as its primary money and standard of value that one of the two metals currently so used by the majority of the other countries with which it has commercial relations. To explain fully why this is so would involve a more detailed discussion of foreign exchange than our plan of exposition makes convenient at this point, but the gist of the matter may be briefly presented as follows:

Payments due from persons in one country to persons in another for goods or services are usually made by means of drafts or bills of exchange purchased from a domestic banker, but drawn in terms of the money of the foreign country concerned. An American merchant, for example, pays for British goods with drafts payable in pounds sterling in London, and for French goods in drafts payable in francs in Paris, and so on. In calculating the cost to him of a given quantity of British

goods the American must know, not only the price of the goods in pounds sterling, but also the market rate of sterling exchange — that is, the number of dollars and cents he must give for one pound sterling. When both countries are on the gold standard, the market rate will vary but little from the par of exchange. The par of sterling exchange in New York is the ratio between the amount of gold in the British pound and the amount of gold in the dollar, formerly 4.8665 to 1. This was ordinarily expressed simply as \$4.8665. For reasons to be given in our chapter on foreign exchange, the rate of exchange between gold-standard countries will not ordinarily fluctuate over a range wider than the par of exchange plus the cost of shipping gold as a maximum, and the par of exchange less the cost of shipping gold as a minimum.

Since uncertainty in respect to the cost of goods purchased hampers trade, it is desirable to have fluctuations not only in prices but in rates of foreign exchange at a minimum. But if one country is on the silver standard while the countries with which its people trade are on the gold standard, fluctuations in its rates of exchange on other countries are not limited by the cost of shipping gold or silver, but rather by the much wider fluctuations in the market ratio of gold to silver. The buyer in a silver-standard country who must make payment in a gold-standard country must buy and pay for drafts payable in gold. The higher the market ratio of silver to gold goes, the more silver money — his standard money — he must pay for a draft of a given size payable in gold. If the market ratio goes up ten per cent, as it easily may, other things remaining the same, he must pay ten per cent more for his foreign bills of exchange, and consequently ten per cent more for all goods bought in foreign countries.

Similar considerations hold, of course, if the country in question is on the gold standard while most of the countries with which it trades are on the silver standard, or if the one country is on a paper-money basis while others are on the gold or silver standard. In all cases, except in one, it is better for any country to follow the crowd in selecting its standard money. No country should adopt a paper-money standard, except possibly as an emergency measure, because others have done so, since a paper-money standard is the very worst standard a country can have if we judge by economic history, and two countries, both of which have paper standards, are likely to have more trouble with their foreign exchange than if one of them remains on the gold or silver standard.

From what has been said it appears that if the nations cannot agree

upon an international bimetallic system, they should each individually establish either a gold standard or a silver standard mono-metallic system, and that as far as possible a mixed system — with some having a gold standard, some a silver standard, some a bimetallic system, and some a paper standard — should be avoided. This seems to have been pretty well recognized by the governments of the earth before the great financial upheaval of the World War; by 1914 the gold standard was on the way to becoming of universal adoption.

When the nations during the nineteenth century one by one gave up their unworkable individual bimetallic systems, after futile attempts had been made to establish some sort of international bimetallicism, the trend was strong toward the gold standard rather than toward the silver standard. The question may be raised, Has the gold standard, as adopted by the majority of the nations during the nineteenth century, any real advantage over the silver standard? The answer seems to be that it has two substantial advantages. In the first place, gold is more beautiful and makes a stronger appeal to the fancy of the world's people as primary money than does silver. Second, and more important, it is more valuable and has, therefore, greater portability. Ordinarily in domestic trade this quality of greater portability need not be considered of great importance, since neither gold nor silver is actually carried about much, and silver is not so bulky that the storage of billions of dollars of it involves serious problems. With silver as standard money, the actual circulating money could consist of paper money and coins of baser metals redeemable in silver, the plan that has actually been used under our gold standard.

But in international trade gold as standard money offers a distinct advantage over silver. On account of its greater value per ounce, the cost of shipping gold is less per dollar than the cost of shipping silver. Since the rate of foreign exchange between two gold-standard countries, or between two silver-standard countries, tends to fluctuate within a range represented by the par of exchange plus the cost of shipping the metallic money as a maximum, and the par of exchange less the cost of shipping the money as a minimum, it follows that the rate of exchange between two silver-standard countries would fluctuate over a wider range than the rate between two gold-standard countries. Now, while the actual cost of shipping the gold or silver in either case would not be great, since comparatively little is shipped, the greater fluctuations in the rate of exchange under the silver standard would bring greater uncertainties in trade than would be produced by the smaller fluctuations under the gold standard. This may not be an extremely important

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matter, but, in the absence of offsetting advantages of silver over gold, it would be sufficient to turn the scale in favor of gold.¹

It is often stated that for a country like China, with a low standard of living, low wages, low prices, and small money incomes, silver is far better adapted as primary money than gold. This point does not seem well taken, since it is necessary neither to have a large unit of value under the gold standard, nor to use the primary money extensively as a medium of exchange. The present French franc, with a value of 6.63 cents in our money, is certainly a unit of value small enough for conditions in China, and it does not seem to be established that paper money and token money would not be used by the Chinese people. However, until the Chinese manage to establish a strong and honest government, something can be said in favor of maintaining the silver standard there with primary money in circulation — its value lying in itself and not in promises of ephemeral or dishonest governments. The argument for a silver standard in China, it may be noted, is based, not upon the need of cheap money in a country with a low standard of living, but upon the need of primary money as a medium of exchange because political conditions are bad.

16. THE USE OF INFERIOR MONEY

Innumerable commodities other than gold and silver have been used as primary money, serving both as a standard of value and a medium of exchange. The common necessities of life, such as wheat, salt, rice, and cattle, have been much used as money, as have also articles of adornment, such as pretty shells, precious stones, and beautiful furs. Base metals, too, including iron and copper, have been used, not merely as token coins, but as primary or standard money. Such articles, inferior to gold and silver as primary money, have been utilized as money for various reasons. Gold and silver have not always been available in sufficient quantities to serve as a medium of exchange. Sometimes inferior money has been used purely as the result of the people's ignorance of the qualities required in a commodity to make it good money. Sometimes the selfish interests of dominating or influential members of a community could be better served by poor money than by good, and the selfish faction, whether a scheming minority or a resistless majority, has foisted or forced the poor money upon the whole people to their detriment.

¹ Mr. J. M. Keynes, in his *Treatise on Money*, vol. 2, p. 319, develops an argument favoring wider fluctuations in exchange rates than are permitted by the gold standard. On this score he might prefer a silver standard to a gold standard.

Commodities which today would make very poor primary money may have served very acceptably as such at other times. The iron money of the Greeks was not absurd, for in those days iron was relatively more valuable than it is today. Similarly, the copper money of the Romans was not unduly bulky, since copper at the time the Romans used it as primary money had relatively great power in exchange. Even the wampum used by the North American Indians, and temporarily adopted as money by the American colonists, was a fairly satisfactory form of currency. The wampum beads were used as primary money by the Indians because at the time and place they had the qualities of good money in higher degree than any other available commodity. The wampum money was portable, divisible, fairly homogeneous, and desired for its own sake as an article of adornment and not merely as a medium of exchange. Originally wampum had great stability of value, since the supply, like the supply of gold, represented the accumulation of years, and the quantity produced in any one year, limited by the scarcity of raw materials and labor, could be only a small fractional part of the total accumulated supply. Demand was steady, depending upon the size of the slowly changing population and unchanging desire of the Indians for articles of adornment. Later, when the white men improved methods of producing wampum and produced also counterfeit wampum in large quantities, it depreciated in value, as paper money does when the printing presses are placed in motion and grind it out with increasing momentum.

17. BARTER CURRENCY OF THE AMERICAN COLONIES

An interesting development in monetary history was the use of bulky agricultural commodities as money in the American Colonies and the making of such commodities legal tender. It may be of interest to consider the reason for the use of this inferior type of money by the colonists at a time when the superiority of gold and silver money had long been recognized and when the total world stock of these metals was certainly great enough to serve the people of the world as media of exchange.

The colonial Americans were rich in natural resources, but poor in man-made goods, both in the form of capital or producers' goods, and in the form of consumers' goods. More concretely they lacked adequate supplies of tools and implements required for developing their farms and plantations, and they lacked that abundance of household goods, clothing, and articles of luxury which their hearts desired. Many of these things could be obtained only by importing them from Europe.

Manufacturing had as yet made little headway in America in the seventeenth and even in the eighteenth century, because, in the great rush to exploit the rich agricultural resources and to carve out magnificent estates or substantial farms from the wilderness, all industries not directly connected with the land tended to be neglected. Since the current produce of their land was not sufficient to pay for all tools, implements, and consumers' goods which their needs and desires impelled them to buy, the majority of the people were not only short of money means to pay for current supplies, they were actually in debt as a result of having expended more than their current income in past years. Moreover, the total value of the goods of all kinds imported from abroad tended constantly to exceed the value of the exports, consisting mainly of agricultural and forest products, and the balance, if paid at all, had to be paid in gold or silver coin or bullion.

Gold and silver then tended to be constantly drained out of the Colonies, thus producing a natural scarcity of metallic money. As just stated, this scarcity of gold and silver was the result of the desire of the people to buy and consume goods which exceeded in value the goods they were able to offer for sale. The total value of agricultural and forest products exported by the Colonies was small because prices of these products were low. These low prices resulted from the fact that the price of the exportable surplus of any commodity in the Colonies was the price of the same commodity in the European market, less the very heavy costs of transportation across the sea in slow-going sailing vessels.

But instead of facing the fact that the low prices of their products resulted primarily from the production of large quantities of these products far from the price-determining market, the people preferred to believe that the low prices were the result of the scarcity of money in the Colonies. Beginning with the assumption that the scarcity of money was the cause rather than the result of the low prices of colonial products, they decided that if only money were more abundant prices would be higher, their incomes greater, and the burden of their debts and taxes less, and they proceeded to bring about this happy state of affairs, which they could not achieve by industry, through the magic of financial legislation, and thereby set a precedent which has been followed again and again in the United States. The colonists reasoned that the scarcity of money represented nothing else than a scarcity of the only two commodities legally rated as money, gold and silver, and that it was impossible to increase the quantity of these metals, because no sooner did they trickle into the Colonies than they were exported.

Under the circumstances the solution of the problem seemed to require that other and more abundant commodities, such as wheat, corn, rice, and tobacco, be rated as money and declared legal tender in payment of debts and taxes.

In declaring such commodities legal tender the government was obliged, of course, to fix a ratio at which the various commodities would be accepted in payment for debts and taxes in the place of metallic money. But if the legal ratio of wheat or corn to gold or silver had been fixed at the previously existing market ratio, nothing would have been gained thereby except a bulky medium of exchange easily obtained in the place of a convenient and portable medium of exchange obtained with some difficulty. In paying debts and taxes such great quantities of the bulky money would have been required that these obligations would have been just as hard to meet as ever. In order to make debts and taxes easier to pay in terms of the new money than in the old, it was necessary to make the legal ratio of wheat or corn to gold or silver lower than the market ratio; to make, for example, one bushel of wheat the legal equivalent in paying debts or taxes, of six shillings in silver, rather than merely four, the market ratio, so that four bushels of wheat would pay as many taxes as six bushels would have paid before.

This useful monetary principle was so well understood by the colonial lawmakers that the tendency constantly existed to fix the legal ratio of the barter currency below its market ratio to gold and silver. The practice of overrating the legal-tender commodities in terms of gold and silver, and of making the barter currency cheaper than metallic money, tended to drive gold and silver completely out of circulation, so that whereas they were merely scarce before the legal-tender laws were enacted, afterward they disappeared utterly. Their complete disappearance then could be offered as a strong reason for maintaining the barter currency, for without money, how could business be carried on?

It requires no great acumen in financial matters to detect a flaw in the reasoning that the people as a whole gained great advantages by the process of overrating the value of commodities as money. If debtors thereby found it easier to pay their debts, it was because creditors were in fact not paid in full; if taxes seemed easier to pay, it was because fewer taxes were actually paid — the Government lost what the taxpayers gained; if prices received for products seemed higher because a bushel of wheat was called six shillings instead of four, prices paid were also higher; and when it came to paying for goods imported, these had to be paid for at their real value in terms of gold and silver, or in wheat and corn or other commodities rated at their market value, and

not at the fictitious legal values established by the colonial Governments. The gold and silver prices of the colonial products were not raised by the use of the barter currency in the Colonies, at least not to an appreciable extent, since to have brought about this result, the barter currency would have needed to expel enough gold and silver money from circulation in the Colonies to cause an appreciable increase in the amount of gold and silver money in circulation in Europe or an appreciable increase in the quantity of gold and silver in the metal markets of the world. Only in this way could the market ratio of the value of gold and silver to the colonial products have been reduced and the prices of these products in terms of gold and silver increased. But, since gold and silver money was very scarce in the colonies when the barter currency was introduced, it is evident that its complete expulsion could have no marked effect on the value of gold and silver in the markets of the world.

The people as a whole in the Colonies were not enriched by the introduction and prolonged use of barter currency. Rather they were further impoverished thereby to the extent of the loss involved in the use of bad money, lacking in portability, durability, homogeneity, and stability of value, in the place of good money made of gold and silver. But while the people as a whole lost rather than gained from the use of overrated barter currency, certain elements of the population gained at the expense of others. Debts contracted in terms of good metallic money could be paid in terms of cheap barter currency, or debts contracted in cheap barter currency could be liquidated after a change in the legal rating in still cheaper barter currency. Because in a new country with large natural resources to be exploited there is a strong tendency for people to go into debt, the majority of the colonists tended constantly to be in debt. Since debtors were in the majority in the Colonies, they tended to elect a majority of the members of the councils, so that a majority of the members of councils also were likely to be debtors. Thus, as debtors the members of the councils stood to gain by the use of cheap money, and it is consequently not surprising that the defects of the legal-tender commodity currency were not more promptly detected by the colonial Governments, and the gold or silver standard restored.

18. BARTER CURRENCY SUPERIOR TO INCONVERTIBLE PAPER

Bad as the multi-standard legal-tender commodity money was, involving as it did injustice to creditors, loss of revenue to the Government and inconvenience and uncertainty in trade and industry, this

much can be said in its favor: it could never under any circumstances become absolutely worthless. All the legal-tender commodities were produced as the result of labor, at a certain cost of production. Any commodity that lost all appreciable power in exchange would cease to be produced, and would therefore cease to be offered in any considerable quantities to creditors in payment of debts. The loss of creditors from depreciation of this legal-tender currency could not ordinarily be one hundred per cent. Inferior to gold and silver it undoubtedly was in nearly all the qualities requisite in good money. But it was far superior to another kind of money issued by the colonial Governments, the Continental Congress, and at various recent times by many important industrial countries — it was superior, that is to say, to unlimited issues of inconvertible paper money, which, flowing from the printing presses in ever-widening stream, becomes so abundant finally as to lose all value as money, and represents total loss to those unfortunate enough to be compelled by law to receive it in payment of money obligations. This type of money is so important and has wrought such great havoc in the world at various times that it deserves extended treatment in separate chapters, and will therefore not be discussed in the present chapter.

CHAPTER IV

THE QUANTITY OF MONEY AND PRICES

1. THE VALUE OF COMMODITIES

Economists are generally agreed upon the principle that an increase in the supply of any commodity will tend to cause a decrease in its value per unit. Since gold is a commodity which is used to satisfy wants directly, whether or not it is used also as a standard of value and a medium of exchange, it follows that an increase in the supply of gold will tend to cause a decline in its value, and, therefore, if it is used as a standard of value, a general rise in commodity prices. There is some controversy, however, in respect to the exact relation between the rate of increase in the supply of gold and the rate of decrease in its value and consequent rise in the level of prices.

The question at issue is this: Does the value of gold, when it is used as money, tend to vary inversely and proportionally with its quantity, so that when, for example, its quantity doubles, its value per unit falls to half, or does its value bear a much less definite relation to its quantity?

The answer to this question may be said to hinge upon the answer to another question: Does the value of gold as money depend upon the value of gold as a commodity, or does the value of gold as a commodity depend upon its value as money?

It is obvious that under free coinage of gold, the value of gold coin and the value of gold bullion must be the same except for the negligible charge the mint may make to cover the actual cost of coinage, and that, therefore, if the value of gold as money declines by fifty per cent when the quantity of money doubles, the value of gold bullion must also decline by fifty per cent, and if the value of gold money doubles, the value of gold bullion also must double.

An attempt to throw light on these questions involves a discussion of the principle of diminishing vendibility of commodities on the one hand, and a discussion of the quantity theory of money on the other. Consider first the principle of diminishing vendibility:

If in a given market area 100,000 pounds of bananas can be sold in a week at a price of five cents a pound, a larger quantity offered for sale within a week would have to be sold, if sold at all, at a lower price, for the following reasons:

To sell the larger quantity would require that more be sold to those

who had been buying, or that some be sold to those who had refused to buy before. But those who had been buying, let us say, five pounds a week, would probably not care for an additional quantity at the same price because of the operation of the law of diminishing utility — successive additional units of the same commodity during a given time have less and less want-satisfying power. To induce these persons to buy additional pounds per week, the sellers would need to reduce the price. Likewise, to induce those to buy who had not been buying, whether because of lack of money, great thrift, or preference for some other commodity at the relative existing market prices, some concession in price would need to be made. What applies to bananas applies also to any other consumers' goods. It applies indirectly also to producers' goods, since the ultimate product of producers' goods is some form of consumers' goods, and an increase in the supply of producers' goods leads to an increase in the supply of consumers' products made from them, causing a decline in the price of the producers' goods themselves, unless it is assumed that either the producers have been making large profits before or will now sell at a loss, neither of which assumptions is normally justifiable. So we conclude that in the absence of some increase in the quantity demanded irrespective of a change in price, such as might result from an increase in the population, a greater degree of prosperity, a diminution in thrift, or some other cause, an increase in the supply of any commodity will cause a decline in its price.

2. DIFFERENCE BETWEEN A CHANGE IN PRICE AND A CHANGE IN VALUE

A commodity which has declined in price in terms of gold money has not necessarily declined in value, as this term is understood among economists — that is, in its power to command other commodities in general in exchange. If other commodities have also declined in price in equal proportion, then there has been no decline in the value of the given commodity, except in terms of gold itself. If, for example, the producers of bananas desire to exchange their product, as they naturally do, for other articles they need, such as bread, meat, clothing, fuel, etc., the quantity of these other things they can get in exchange for 100,000 pounds of bananas will not be diminished by a decline in the price of bananas from five cents a pound to four if other articles have likewise declined in price proportionally — that is, by twenty per cent. The \$4000 they now receive for 100,000 pounds of bananas will buy just as much as the \$5000 they would have received with bananas at five cents a pound. If, however, the prices of other commodities remain un-

changed, a decline in the price of any given commodity represents an equal decline in its value. Several corollaries follow. The value of a commodity may rise even though its price remains unchanged if the prices of other commodities fall; the value of a commodity may fall even though its price remains the same if the prices of other commodities rise; the value of a commodity may fall while its price rises if the prices of other commodities rise in greater proportion, and its value may rise while its price falls if the prices of other commodities fall in greater proportion. It is, therefore, not safe to assume that the value — the power of a commodity to command other commodities in exchange — varies directly with its price, an assumption that is often made and one which is a source of endless confusion. It is always necessary to consider the change in price of any given commodity in relation to price changes of other commodities to arrive at a sound conclusion in respect to a possible change in its value. Regardless, however, of the general trend of prices — whether up or down — an increase in the quantity of any particular commodity will tend to cause a decline in its value: if prices in general are rising, its price will tend to rise less rapidly than the average; if prices in general are falling, its price will tend to fall more rapidly than the average.

3. CHANGES IN THE SUPPLY AND VALUE OF GOLD

Since gold is a commodity, whether or not used as money, it follows that what is true of all commodities must be true of gold — an increase in its quantity or supply will tend to cause a decline in its value. But the value of gold cannot be expressed in terms of money or price when gold itself is the standard of value. The commodity gold and the money gold are identical, and to express the value of a commodity in terms of itself is meaningless. There is no price of gold in the usual sense of the word, although there is a mint price of gold. The mint price of gold in the United States, from 1837 to 1933, was \$20.67 an ounce for pure gold, but this throws no light on the value of gold, but merely states how many dollars of gold were to be coined from an ounce of bullion: one ounce equaled \$20.67; or 23.22 grains equaled \$1. Regardless of the mint price of gold, whether it be \$20.67 or \$1.67 an ounce, the value of gold is high or low in proportion to the quantity of articles other than gold it will command in exchange for itself.

But if the value of gold cannot be expressed in terms of gold money, it can be expressed in terms of the prices of other commodities, and changes in the value of gold are consequently reflected in and measured by changes in the prices of other commodities. If prices of other com-

total value of the whole supply remain the same regardless of changes in its quantity. But when we examine the quantity theory of money we shall find arguments supporting the point of view that the value of gold used as money varies inversely and proportionally with its quantity, other things remaining the same. Since a large part of the total gold supply of the world is used as money, and since the proportion of all gold used as money does not vary a great deal from time to time, it follows that if the value of gold used as money varies inversely and proportionally with its quantity, the same must practically be true of the total gold supply, the monetary stock and the non-monetary stock combined.

4. MEASURING CHANGES IN THE VALUE OF GOLD

It has been stated that changes in the value of gold may be measured by changes in the general level of prices. A rise in gold prices means neither more nor less than a fall in the value of gold. More definitely, the value of gold per unit varies inversely and proportionally with the general level of prices. If prices double, the value of gold falls to half of its former value; if prices increase fourfold, the value of gold declines to a fourth of its former value; if prices decline by half, then the value of gold doubles; and so on.

When changes in the price-level and in the value of gold are calculated or recorded, it is usually most convenient to state the facts in percentages and not in common fractions. For example, prices are said to have risen to 125 per cent of the previous level, not to have increased by one fourth; and the value of gold, or its purchasing power, is said to have declined to 80 per cent, and not to four fifths of its former value. The reason is apparent — decimal fractions are more serviceable tools for statistical calculations than common fractions. This being so, a word of caution is necessary here. For some reason, a great many people fall into the grievous error of supposing that if anything can rise more than 100 per cent it can also fall more than 100 per cent, and that if prices rise two hundred per cent, gold necessarily declines 200 per cent in value, and so on. It must, therefore, be emphasized that 100 per cent of anything, whether it be a figure representing the price-level, the value of gold, or what not, is all of it, and that a decline of 100 per cent brings us down to zero below which the value of nothing, unless it be assessable stock of bankrupt banks, can fall. It should also be emphasized that when prices rise, for example, to 125 per cent, or five fourths, of their former level, the value of gold does not fall to 75 per cent or three fourths of its former level, but only to 80 per cent or four fifths of its former level. A general statement that covers the situation is that the figure which

represents the decline in the value of gold is the reciprocal of the figure that represents the rise in prices. The reciprocal of a number is 1 divided by that number, or, in the case of a fraction, it is the fraction turned upside down.

5. THE GENERAL LEVEL OF PRICES

Consider next how changes in the general level of prices which measure changes in the value of gold may be calculated. By the general level of prices is meant, as already indicated, the average price of all commodities or things of value which are ordinarily exchanged for gold, or money. Strictly speaking, this average price should be computed on the basis of the prices of everything bought and sold — commodities both raw and manufactured, buildings, land, labor, stocks, bonds, and so on — but statisticians can shorten their labors by selecting a relatively short list of representative prices, of such a nature that changes in the average of the selected prices may reasonably be expected to reflect fairly accurately changes in the average of all prices. Sometimes, moreover, what is wanted is not a figure representing changes in all prices, but a number reflecting changes in average prices of certain classes of goods, such as the ordinary necessities of life which the laborer must buy with his money wages. Having selected the prices to be averaged, it remains to select the mathematical method of computing the average, and more particularly, the method of calculating what percentage of the old price-level is represented by the new price-level. There are literally dozens of methods of calculating the averages after the prices to be averaged are selected, but with the details and the relative advantages and disadvantages of all these various methods we need not concern ourselves. Here it is only necessary that the reader should understand what is meant by a change in the price-level and the relation of such a change in the price-level to the value or purchasing power of money, and that he should have some conception of the process of calculating changes in the price-level. All these things can be made clear by a very simple example:

Suppose that three commodities, A, B, and C, are fairly representative in their price movements of all commodities. Suppose further that the price of A per unit was \$1 and is now \$1.75; that the price of B was \$3 and is now \$3.60; and that the price of C was \$2.50 and is now \$2. Expressed as percentages of the former prices, the new prices of the three commodities are respectively 175 per cent, 120 per cent, and 80 per cent. Adding these three percentages together, we get 375, and dividing by three, the number of prices, we get the average of the three, or 125 per cent. If this average of 125 per cent is truly representative of all

commodities, as assumed, then we conclude that the average of all commodity prices has risen to 125 per cent of its former level, and that the value of gold in terms of other commodities, or the purchasing power of gold money, has fallen to the reciprocal of $125/100$ of its former value or purchasing power per unit, or 80 per cent.

6. FALLACIES OF INDEX NUMBERS

The 125 per cent, representing the new price-level expressed as a percentage of the old price-level, may be called a price-index number. If the old prices are assumed to be the prices prevailing in 1913 and the new prices those prevailing in 1930, then the price-index of 1930 would be 125, the base index of 1913 being 100. Obviously what the price-index will be depends upon the choice of the base year and the prices then prevailing just as truly as upon the prices of the given year.

It should be emphasized that, while changes in the price-level represent the best means of measuring changes in the value of money, whether gold money or some other kind, writers are not agreed upon the best method of measuring changes in the price-level, the computed average differing not only with the items included in the average, but also with the method of computing the average: the average computed by one statistician may differ widely from the average computed by another, even if both are honestly trying to find the true change in the price-level. And if one statistician is financially interested in proving that prices have fallen, while another desires to prove that prices have risen, it is conceivable that each can apparently demonstrate mathematically what he desires.

For example, wage-earners may want to show that prices and the cost of living have risen in order to justify a demand for an increase in wages, while the employers in the case may desire to show that prices and the cost of living, instead of having risen, have actually fallen. The facts available are contained in the following table:

Item	Old price per pound	New price per pound	Per cent old price is of the new price	Per cent new price is of the old price
Bread	\$0 05	\$0 10	50	200
Butter..	0.50	0 25	200	50

Considering the old prices of bread and butter as 100 per cent in each case, the new prices are respectively 200 per cent and 50 per cent of the old. Adding the two percentages together, we get 250 per cent, and dividing by two, we arrive at the average of 125 per cent; and we conclude that prices of bread and butter have on the average increased 25 per cent, and that the cost of living, as represented by the prices of

bread and butter, has risen 25 per cent. The wage increase is justified. On the other hand, considering the new prices of bread and butter as 100 per cent in each case, the old prices are 50 per cent and 200 per cent respectively of the new. The average of the two is 125 per cent; and we conclude that the old prices and the cost of living were 25 per cent higher than the new. Instead of a rise in wages, a cut in wages is justified. Other plausible results might be shown on the basis of the facts. One pound of bread and one pound of butter at the old prices would have cost \$0.55, but at the new prices would cost only \$0.35, a reduction of 30 per cent. But, it might be argued, ordinarily a person will consume five pounds of bread for each pound of butter, so a fairer comparison would be the cost of five pounds of bread and one pound of butter under the old prices with their cost under the new prices; and this would be found to be \$0.75 under each set of prices, so that the conclusion justified in this case would be that the price-level had remained unchanged. This discussion might be prolonged and elaborated, but enough has now been said to show that care should be exercised in computing changes in the price-level.

7. A SATISFACTORY WEIGHTED INDEX NUMBER

Statisticians have found that the construction of an index number of prices which will measure satisfactorily changes in the price-level requires that prices of a considerable number of representative commodities be included, and that these commodities be "weighted" in accordance with their importance in trade and industry, so that the quantities of the various commodities bought and sold as well as their prices will be given consideration in computing changes in the price-level. A widely used and satisfactory method of computing an index number of prices is the method represented by the following formula:

$$\frac{\sum p_1 q_0}{\sum p_0 q_0}$$

The letters or symbols in this formula have the following meanings:

p_0 represents the price of a given commodity at the base period.

p_1 represents the price of a given commodity at the given period.

q_0 represents the quantity of a given commodity at the base period.

Σ is the symbol of summation, or addition.

The use of this formula may be illustrated by a simple example. Suppose that one wants to compute the average rise in the price of wheat, corn, and cotton in the United States from September, 1914, to Sep-

tember, 1920, making due allowance for the total quantity of each commodity produced, so that the index of prices found will throw light on the increase in buying power accruing to the farmers as a result of the rise in prices. The formula requires that one find the quantity of each of the three commodities produced at the base period, 1914, calculate the value of these respective quantities both at the prices of September, 1914, and September, 1920, and the total value of all three at the two dates, and then divide the aggregate value of the three in 1920 by the aggregate value of the three in 1914. Using the approximate quantities produced and the prices of these commodities at these dates, and calculating the price index on this basis we obtain the following results:

	Wheat (bu)	Corn (bu)	Cotton (bales)	Total
Total production in 1914... ..	680,000,000	2,670,000,000	16,000,000	
Price in Sept., 1914	\$1.11 per bu.	\$0.77 per bu.	\$40 per bale	
Price in Sept., 1920	\$2 50 per bu.	\$1 30 per bu.	\$135 per bale	
Value at 1914 prices	\$754,800,000	\$2,055,900,000	\$640,000,000	\$3,450,700,000
Value at 1920 prices	\$1,700,000,000	\$3,471,000,000	\$2,160,000,000	\$7,331,000,000

Price index, \$7,331,000,000 divided by \$3,450,700,000 = 2 12, or 212 per cent.
Average rise in price, 212 per cent minus 100 per cent, or 112 per cent.

This method of constructing an index number of prices is to be recommended because it is simple and because it does not require that the statistics of current production—for the given year—be available when the index is being calculated. Frequently it is impossible to obtain such statistics promptly. If a sufficiently large number of prices is included, say from 50 to 500, depending upon the particular purpose for which the index is to be used, the results given by this method will compare favorably with the results obtained by more complicated methods, for details of which the reader is referred to textbooks on statistics. For the student who is unfamiliar with statistical formulas a word of caution may be added. In the formula

$$\frac{\sum p_1 q_0}{\sum p_0 q_0}$$

the q_0 in the numerator and the q_0 in the denominator may not be canceled out, as might be done in a fraction not containing the symbol of summation, Σ . There is no short cut—the quantity of each commodity included in the index must be multiplied by its respective price in

both the base year and the given year, and the series of products added together as indicated in the formula, and as illustrated in our example.

8. THE QUANTITY THEORY OF MONEY STATED AND ILLUSTRATED

Up to this point in this chapter it has been demonstrated that an increase in the quantity of gold, other things remaining the same, will cause a decline in its value as a commodity just as an increase in the quantity of any other commodity tends to cause a decline in its value. It has been further demonstrated that a decline in the value of gold as a commodity must necessarily be accompanied by a decline in the value of gold as money, if gold is used as primary and standard money under free coinage, and therefore by a rise in prices. It has been shown, too, that changes in the value of standard gold money can be satisfactorily measured by computing index numbers of prices reflecting changes in the general level of prices. The next question to be considered is one already alluded to, namely, whether the value of money does tend to vary, as is contended by many writers, inversely and proportionally with its quantity, so that, for example, if the quantity of money is doubled, other things remaining the same, prices on the average also double, and the value of money per unit falls to half.

The importance of the quantity theory of money lies in this: If it is true that the general level of prices tends to vary directly with the quantity of money, then it becomes possible to change the level of prices by changing the quantity of money. If we think that prices should be raised 10 per cent, we simply increase the quantity of money 10 per cent; if prices are too high and should be reduced 10 per cent, we reduce the amount of money 10 per cent. Naturally we cannot thus control the price-level unless we can control the amount of money. While it is difficult to control the amount of gold money, expressed in terms of ounces, which for the world at large depends primarily upon the richness of available gold deposits and the accumulations of past centuries, and for any particular country upon its international trade relations, it is possible to control the amount of gold money, as measured in dollars, by changing the weight of gold in the dollar. It is also possible to control the amount of token and credit money, such as our silver coins and greenbacks, and the amount of bank credit in the form of deposits subject to check, which, acting as substitutes for gold money, affect the value of gold and the price-level.

The general nature of the reasoning upon which the quantity theory of money — or, more precisely, the quantity of money theory of prices — is based can be most clearly and conveniently brought before the

reader by means of a simple example involving various assumptions contrary to fact. Assume, for the sake of simplicity and clarity of illustration, that gold is used only as money, and that no money other than gold is used. Assume, secondly, that the only commodities bought and sold for money are wheat, coal, and iron, other articles either being produced by people for their own use or exchanged by barter. Assume, finally, that gold passes promptly from hand to hand, not being hoarded, and exchanges for these commodities in such proportion that a ton of iron is worth in terms of gold three times as much as a ton of coal and fifteen times as much as a bushel of wheat.

Now, suppose further that the total quantity of wheat bought and sold in the course of a year is 100,000,000 bushels, the quantity of coal 60,000,000 tons, and the quantity of iron 8,000,000 tons; and that the gold money in circulation amounts to \$10,000,000, and that each dollar changes hands in payment for wheat, coal, or iron once a week, or fifty-two times a year. What would be the price of each of the three commodities? Under the conditions assumed the only possible answer is readily computed, and it is \$1 a bushel for the wheat, \$5 a ton for coal, and \$15 a ton for iron. At these prices the total value of the three commodities bought and sold in the year is \$520,000,000, and this equals the total purchasing power in terms of gold money in the hands of buyers — namely, \$10,000,000 in gold used fifty-two times during the year. This may all be set down in the form of a table as follows:

Commodity	Quantity	Price	Value
Wheat	100,000,000 bu.	\$ 1	\$100,000,000
Coal	60,000,000 tons	5	300,000,000
Iron	8,000,000 tons	15	120,000,000
Total	168,000,000 units		<u>\$520,000,000</u>

If all the prices had been lower, each dollar could not have been spent fifty-two times during the year. If all the prices had been higher, there would not have been enough money to pay for all the wheat, coal, and iron. If the price of one of the commodities had been lower, the price of one or both of the others would have had to be higher, and the relative values assumed would not have existed. The prices given are the only prices which will establish an equilibrium between the amount of money offered and the quantity of commodities supplied. The simple average price of the three commodities, unweighted for quantity, is \$7, found by adding together \$1, \$5, and \$15, and dividing by 3. The total number of units of commodities is 168,000,000, and the average price per unit, calculated by dividing \$520,000,000 by 168,000,000, is approximately \$3.095. The relation between the quantity of money in circulation and

its velocity of circulation on the one hand, and the quantity of commodities bought and sold and the average price per unit on the other hand, may be expressed in the form of an equation, thus:

$$\$10,000,000 \times 52 = \$3.095 \times 168,000,000$$

From this equation it becomes at once apparent that if the quantity of money had been increased to \$20,000,000, or doubled, prices likewise would have doubled, provided other things had remained the same. The equation would then read:

$$\$20,000,000 \times 52 = \$6.19 \times 168,000,000$$

Wheat would now be \$2 a bushel; coal \$10 a ton; and iron \$30 a ton. Prices having doubled, the value of money per unit would have been cut in half. If, on the other hand, the quantity of money had been reduced by half, prices would have suffered a similar decline, and the value of money per unit would have doubled. In short, any change in the quantity of money, other things remaining unchanged, would result in an equal change in average prices. If we grant the assumptions made, prices vary directly with the quantity of money; the value of money per unit varies inversely and proportionally with its quantity; the value of the total supply of money remains unchanged regardless of changes in its quantity; the truth of the quantity theory of money is demonstrated by simple arithmetic. But it should be noted that the conditions assumed in the illustration are highly artificial.

In the actual business world, where gold is used as standard money, it is used also for other purposes than as a medium of exchange, and various other kinds of money, as well as those extremely important substitutes for money, bank checks, are used in buying and selling goods. Moreover, money may not circulate regularly at the same velocity — it may change hands less rapidly at some times than at others. Again, not merely three commodities are bought and sold, but thousands of them, not to mention labor, stocks and bonds, parcels of real estate, and other goods, and some of these things are frequently sold several times in quick succession, while others remain unsold for years at a time. Finally, the quantity of new commodities produced and offered for sale varies incessantly and often markedly. All these things would seem to make it appear extremely doubtful that there is an exact or even a close relation between the quantity of money and prices.

9. A MORE PRECISE STATEMENT OF THE QUANTITY THEORY

The purpose of the simple illustration just presented was not to prove the soundness of the quantity theory of money, but merely to

introduce the reader in a simple way to the general nature of the reasoning on which the theory is based. The simple equation given in the preceding section, while it seemed to prove the truth of the quantity theory when not too closely examined, upon more careful inspection was found to be defective because based upon many assumptions contrary to fact. The quantity theorists, notable among whom is Irving Fisher, have, however, devised the so-called equation of exchange, which represents truly the relation between the quantity of money and the general level of prices as it actually exists in the business world, with no artificial conditions assumed. This equation of exchange is written as follows:

$$MV + M'V' = PT$$

In this equation M stands for money in circulation, including, in the United States, not merely gold money, but also silver, nickel, and copper coins, and our various kinds of government paper money and bank notes, but excluding money held in bank reserves and the Government Treasury. V stands for the average number of times each dollar of money changes hands during a given period, as a week, a month, or a year. M' stands for the total amount of bank deposits subject to check, not including deposits by banks in other banks. V' stands for the velocity of circulation, or rate of turnover, of bank deposits subject to check. What is meant by the velocity of circulation, or turnover, of bank deposits can be most readily explained by a concrete example. Suppose that James White carries a bank deposit subject to check which on the average stands at \$1000. But he feeds this deposit regularly with his salary checks and other sources of income at the rate of \$1000 a month, or \$12,000 a year. At the same time he draws checks against it to cover his living expenses and investments, drawing out on the average \$1000 a month, or \$12,000 a year. The rate of turnover or velocity of circulation of his bank deposit is then once a month, or twelve times a year. Similarly, the velocity of circulation of all bank deposits might be calculated — by dividing the total amount of checks drawn against all banks by the total average amount of bank deposits.

On the right-hand side of the equation, P stands for the average price and T for the total number of units of goods or services bought and sold. This is not the simple average of all prices, it should be noted, but the weighted average obtained by dividing the total value of all goods and services bought and sold during a given period of time, by the total number of units bought and sold.

Applying these meanings to the six factors in the equation it will be perceived that it reads in plain English as follows: .

The quantity of money in circulation multiplied by its velocity of circulation, plus the quantity of bank deposits subject to check multiplied by their velocity of circulation, equals the number of units of goods and services bought and sold multiplied by their average price.

No one can deny the truth of this statement. Even the opponents of the quantity theory of money admit that the equation of exchange, with its six terms properly defined, is true. It is, in fact, as true as the glaringly obvious fact that in the aggregate the buyers of goods and services pay exactly as many dollars as the sellers receive. But this truism, the opponents contend, offers little evidence of any direct and necessary relation between the quantity of money and prices. The quantity theorists, however, hold that it offers very convincing evidence of such a relation. Let us examine this evidence in the light of reason and monetary history, avoiding the metaphysical hair-splitting and word-quibbling which too often conceal the true arguments pro and con in such controversies as this.

10. THE NATURE AND SIGNIFICANCE OF THE QUANTITY THEORY CONTROVERSY

The quantity theorists do not contend that prices actually and necessarily vary directly and proportionately with the quantity of money, nor do the opponents contend that prices are quite unrelated to the quantity of money. The controversy does not take this extreme form. Rather it takes the form, first, of a considerable difference of opinion concerning the degree to which changes in the money supply are likely to affect prices, and, secondly, of a decided difference of opinion as to whether the price-level is determined by the quantity of money and bank credit, or is itself one of the determinants of the quantity of money and bank credit. Whether or not the controversy has any economic and political significance, and does not represent merely an exciting game of mental gymnastics, depends upon whether it is deemed possible consciously to control the price-level by the deliberate manipulation of the monetary mechanism of the Government and the banks.

While the quantity theorists do not hold that prices necessarily vary directly and proportionately with the quantity of money, they do contend that there is a very strong tendency for prices to rise directly in proportion to an increase in the supply of money. Their opponents deny that there is any such strong tendency. Close reasoning is involved here and the reader must attend carefully to follow the argument. The

point to be demonstrated is that an increase in the quantity of money, of 50 per cent, for example, tends very strongly to bring about a 50 per cent increase in prices. That is to say, if the factor M in the equation, $MV + M'V' = PT$, increases by 50 per cent, the factor P will tend strongly to increase by 50 per cent also. This is true, say the quantity theorists, because a 50 per cent increase in the quantity of money tends very strongly to be accompanied by a 50 per cent increase in bank deposits subject to check, but does not tend directly to cause a change either in the velocity of circulation of money or in the rate of turnover of bank deposits, nor does it cause a substantial change in the physical volume of trade. If, then, both M , the amount of money, and M' , the amount of bank deposits subject to check, increase 50 per cent, V and V' remaining the same, the value of the left-hand side of the equation of exchange, MV plus $M'V'$, is increased 50 per cent, and the right-hand side must therefore also be increased 50 per cent. This means that if T , or the physical volume of trade, is unchanged, P must have increased 50 per cent.

But upon what grounds can it be contended that an increase in the quantity of money, M , tends to result in an equal increase in M' , and to leave practically unchanged V , V' , and T ? It is obvious that if a change in M does not bring a corresponding change in M' , or does bring substantial changes in V , V' , or T , the assumption that an increase in M tends strongly to bring an equal increase in P is not justified.

11. THE RELATION BETWEEN THE QUANTITY OF MONEY AND THE QUANTITY OF BANK DEPOSITS

A discussion of the basis of the assumption of the quantity theorists that there is a direct relation between the quantity of money and bank deposits such that, if the first increases 50 per cent, the second tends also to increase 50 per cent, leads unavoidably to a brief discussion of certain principles of banking which cannot be adequately treated at this point, and to which fuller consideration must be given later. The present discussion of these principles is provisional only and designed merely to bridge what would otherwise be a gap in the reasoning sustaining the quantity theory of money. This represents only one of many similar difficulties encountered in a satisfactory exposition of the subject of money and banking, the different phases of which are so interrelated and complicated that it seems almost impossible for anyone to understand fully one aspect of it without first having learned something about all other aspects.

With some qualifications to be noted in due course, it may be said that

the quantity theorists are justified in holding that there tends normally to be a fixed ratio between the amount of money in circulation and the amount of bank deposits subject to check. This fixed ratio is the result of two facts. First, banks are required by law to maintain a certain minimum cash reserve ratio, or, in the absence of such a law, they are required, in the interest of their own safety and reputation, to maintain adequate cash reserves. If this minimum cash reserve ratio is, for example, ten per cent, they will aim not to let the amount of their cash reserves fall below ten per cent of their deposits subject to check. On the other hand, a bank is ordinarily striving for the maximum profits consonant with safety, and will not maintain more cash reserves than are necessary, since cash reserves are idle capital which yields no return as do the funds which the bank lends or invests. Consequently, the minimum cash reserve required tends strongly also to become the maximum. If the various banks in a system of banks, such as the commercial banks of the United States, find that their cash reserves are greater than necessary, they tend to lend and invest more freely until their reserve ratio is again down to the minimum, and if they find that their reserve ratio is below the minimum, or threatening to sink below the minimum, they call old loans and restrict new loans, and sell investments until their reserve ratio is restored to a safe level.

We come now to a point in the discussion where we must provisionally merely state some facts without fully explaining them. When the various banks in a system of banks expand loans and investments, the result tends to be an approximately equal increase in bank deposits. This is true, in brief, because every dollar a bank lends or pays for a bond or other investment tends to become a deposit either in that bank or some other bank. Conversely, when banks reduce loans and investments, there tends to result an equal reduction in bank deposits. If, then, all the banks combined obtain from some source, let us say, \$100,000,000 of additional cash reserve, they will be desirous of expanding loans and investments until they have brought about an expansion of \$1,000,000,000 in bank deposits, or ten times their excess cash reserves; and if their cash reserves are depleted by \$100,000,000, having previously been at the assumed minimum of ten per cent of deposits, the banks must reduce their loans and investments in the aggregate by about \$1,000,000,000 and thus reduce deposits in order to restore the cash reserve ratio to ten per cent. The reasoning here on the relation between cash reserves, deposits, and loans and investments, provisional and abbreviated, may be neither clear nor convincing, and the conclusion reached must, therefore, be accepted perhaps on

faith. But in later chapters these relations will be demonstrated by more detailed theoretical analysis, and illustrated by statistics of banking operations in recent years in the United States.

Granted that there tends to be a fixed ratio between cash reserves of banks and bank deposits, it remains to show that there exists a similar relation between money in circulation and bank deposits. It has been observed, and can at least in some measure be demonstrated by statistics, that individuals, firms, and corporations tend normally to preserve a more or less definite ratio between their cash transactions and their check transactions. Cash is used, for example, in small retail transactions and in many cases in meeting payrolls, while in most transactions of any importance among business men checks are used. Habits and preferences in this respect are not normally subject to great and sudden changes, and are unlikely to be upset by changes in the supply of money in the country. When a person comes into possession of more cash than he requires for his customary cash payments, he deposits the surplus in the bank; when he runs short of cash, he cashes a check and thus replenishes his purse. A general increase in the amount of money in circulation causes a flow of money into the banks, increasing the cash reserves of the banks. The increase in the cash reserves of the banks tends to lead to expansion in loans and investments of the banks, and consequently in bank deposits, affording the basis of larger check transactions by the customers of the banks. The money in circulation will continue to flow into the banks and bank deposits will continue to expand until the equilibrium is once more established with the customary ratio existing between the banks' cash reserves and their deposits, on the one hand, and their customers' cash and check transactions on the other. And when this equilibrium is established, the ratio between the cash in circulation and the cash reserves of the banks will be as before — each will tend to have increased in the same proportion. Similarly, we can reason that if the increase in the money supply came in the first instance in the banks, increasing their cash reserve ratio, the banks would tend to expand loans and investments and thus deposits, affording the basis of larger check transactions for their customers. The customers would now need to draw some additional cash from the banks to restore the usual ratio between their check and their cash transactions, and the flow of cash from the bank reserves into circulation would continue until the customary ratio between cash in circulation and bank deposits had been restored.

From all this we may conclude, with certain qualifications yet to be made, that an increase in the quantity of money, M , tends to be ac-

accompanied by or to result in a similar increase in bank deposits subject to check, M' . But one important point should be emphasized. To permit a 50 per cent increase in bank deposits requires an increase in the amount of money in the country great enough to increase both the money in circulation and the cash reserves of the banks by 50 per cent. If, for example, the customary ratio between cash in circulation and cash in bank reserves is 1 to 1, and the amount in circulation is \$1,000,000,000, and the amount in the banks is \$1,000,000,000, then it will require 50 per cent of \$2,000,000,000 of additional money to permit a 50 per cent expansion in bank deposits if the customary ratios are to be preserved; \$500,000,000 must go into circulation and \$500,000,000 must go into the bank reserves, and it makes no difference in what quarter this new money first appears, whether in the banks or in general circulation. It is not quite correct to state, then, that a 50 per cent increase in the amount of money in circulation tends to result in a 50 per cent increase in prices. Unless there has been a concomitant increase in the cash reserves of the banks, a certain proportion of this new money must flow into the banks before bank expansion becomes possible, and the net increase in the amount of money in circulation is less than 50 per cent.

Another point that should be noted is that the new money will tend to affect prices most promptly if it comes from many sources, but it will affect prices, nevertheless, even if it comes from only a single source, as from one enormously rich new gold mine, or is imported from abroad by one large banking house. In either of these cases the owner of the new money will either invest it or spend it, unless, what is unlikely, he hoards it. The people who receive it from the original owner will in turn invest it or spend it, and so it will gradually be diffused throughout the banking system and among the people.

12. THE QUANTITY OF MONEY AND THE VELOCITY OF CIRCULATION

Having shown on what grounds it may reasonably be assumed that an increase in the supply of money will tend strongly to bring about a proportional increase in bank deposits, we must now show that such an increase in money does not tend to cause a substantial change in the velocity of circulation of either money or bank deposits, or of the physical volume of production and trade, and that practically the full effect of the increase in money and bank credit will tend to act upon prices. Consider first the velocity of circulation of money and bank deposits.

Just as every person tends to preserve a customary ratio between his cash transactions and his check transactions, so he tends also to pre-

serve a customary ratio between his liquid resources in the form of cash and money in the bank or bank deposits, on the one hand, and his annual income on the other. His annual income equals, of course, the amount which he spends plus what he invests. For instance, a man who has an income of \$5000 a year may, as a matter of habit, carry an average of \$25 in his purse and maintain an average checking account in his bank of \$225, so that his pocket-money plus his checking account amount on the average to 5 per cent of his income. In that case the average turnover of his cash on hand and bank deposit combined would be twenty times a year. Since there is this sort of customary turnover for each person, there must be a customary turnover for all individuals, firms, and corporations combined, and the average rate of turnover for all combined would, under normal circumstances, not be subject to great and sudden changes. Assume this to be twenty times a year.

Suppose, then, that all these individuals, firms, and corporations should find themselves on the average with 50 per cent more cash and bank deposits on hand than normal, but with the same incomes as before, because neither prices nor the physical volume of trade had changed. Unless they now spent or invested more freely — that is, bought more goods than before — the customary ratio between their income and their liquid resources would be badly upset — the ratio would be only two thirds as high as before. If, however, they all spent or invested more freely, the demand for goods of all kinds would be increased, and unless the supply were also increased, prices would rise, and wages would rise, and money incomes on the whole would rise. In order to re-establish the customary ratio between cash and bank deposits on the one hand and income on the other, all the individuals, firms, and corporations would on the average not only have to spend the original excess, but the additional new income that now came pouring in. In the aggregate they would not be rid of their cash and bank deposits after spending them once — every dollar spent by one would be received by another. Now, there is no good reason for assuming that an increase in their money incomes and an increase in the amount available for spending and investment would change substantially the opinion of many of the people as to the proper relation between liquid resources in the form of cash on hand and money in the bank to total income and total expenditures. It might, therefore, reasonably be expected that equilibrium would be re-established when, in the absence of an increase in the physical volume of production, prices and money incomes had risen by the same proportion as money and bank deposits had increased.

13. THE QUANTITY OF MONEY AND CREDIT AND THE PHYSICAL VOLUME OF TRADE

But would not the increase in money and bank deposits cause an expansion of production and the physical volume of trade rather than exhaust itself in forcing a rise in prices? To this the quantity theorists may reply that the amount of goods produced, transported to market, and offered for sale is limited by the physical capacity of plant and equipment — by natural resources, labor, and capital — and that the amount of land, labor, and capital equipment cannot be increased by the simple expedient of digging more gold from the ground, or importing it, or by printing government paper money and expanding bank credit. Therefore, an increase in M and M' does not tend substantially to increase T .

This concludes the reasoning on which the quantity theory of money is based. Since increasing the quantity of money does tend strongly to increase bank deposits proportionally, and not to increase either V and V' or T , the natural result of an increase in M is a proportional increase in P . And the reasoning which supports the conclusion that an increase in the amount of money tends to bring an increase in prices would support also the conclusion that a decrease in the amount of money would cause a proportional decrease in the price-level.

14. SOME CRITICISMS OF THE QUANTITY THEORY

The arguments commonly advanced by the quantity theorists to support their contention that a change in the quantity of money in circulation tends to cause a proportional change in prices have now been presented, and, with some reservations, accepted. It remains to consider these reservations and some arguments of the opponents of the quantity theory. Consider, first, the assumption that an increase in the amount of money tends to result in a proportional increase in bank deposits. It must be emphasized that the increase in bank deposits is not primarily the result of more cash being carried to the banks, but comes from the desire of the banks to utilize their excess cash reserves in expanding loans and investments. But neither a bank nor anyone else will invest when there is good reason to believe that the investment will result in a loss being sustained. When prices of commodities and securities are falling, and are expected to continue to fall, business men and investors will not seek loans from the banks in order to buy, nor will the banks themselves be desirous of investing in securities. Under these circumstances an increase in the cash reserve of banks will not and cannot cause a proportional increase in loans and investments, and

consequently in bank deposits. It is only when bankers are eager to invest and business men and investors are eager to borrow that the increase in cash reserves *may* reasonably be expected to result in a proportional increase in bank deposits. It is correct to say that an increase in bank reserves will *permit* an expansion of bank loans and investments, and consequently of bank deposits. It is not correct to say that it will always and promptly *cause* such an expansion.

Here we have probably the most serious defect of the quantity theory of money as a theoretical basis for monetary reform. It is precisely during periods of industrial depression and falling prices that attempts are likely to be made to make practical applications of the quantity theory. More money is likely to be injected into circulation, or the cash reserve requirements of the banks will be reduced by law, for the purpose of causing a rise in prices; but the rise in prices will not appear until the desire is aroused in the people to utilize the additional money and bank credit in productive enterprise and investment. Probably nothing short of the printing of great quantities of paper money and distributing it gratis among "the veterans" or other people, thus putting enormous sums of actual cash in the hands of consumers, could start a buying wave of sufficient proportions to reverse the movement of prices from downward to upward in the absence of other stimulating developments.

Not only do excess bank reserves tend to remain idle during periods of depression, thus upsetting the customary ratio between the amount of money in the banks and bank deposits, but if the depression is serious and many banks are failing, people tend to withdraw unusually large sums in cash from the banks, thus upsetting the customary ratio between cash in circulation and cash reserves of the banks. Moreover, so long as prices of commodities, securities, and real estate and the wages of labor continue to show a declining tendency, people spend and invest less freely, and actually hoard currency, so that the velocity of both money and bank deposits is cut down; and this tendency cannot at once be checked by the issue of additional money. These monetary phenomena of depression periods appear so regularly and in such unmistakable form during all severe depressions that even the most ardent believer in the quantity theory of money can hardly deny their existence and their potency. But the importance of this limitation in the power of an increase in the supply of money to raise prices should not be exaggerated. It still remains true that over a longer period of time the probable effect of an increase in the quantity of money is a proportional increase in prices. After every period of depression comes a period of

prosperity. Prices of commodities, securities, real estate, and wages of labor rise. People become eager to spend and invest. Banks find would-be borrowers for every dollar they are willing to lend. Bank reserves are utilized to the utmost. In the absence of fundamental changes in the banking system, the ratio of deposits to cash that prevailed in the last period of prosperity will tend to be re-established in the next, and the old ratio of cash in circulation to cash in banks, as well as the old rate of turnover of both cash and bank deposits, will also tend to be re-established. From the peak of one period of prosperity to the next, there tends to be no marked change in these customary ratios, and on these grounds there is no good reason to doubt the soundness of the quantity theory of money. *The quantity theory must only be adjusted to or corrected for the abnormalities of the business cycle.*

While an increase in the quantity of money cannot force prices up from the bottom or trough of a period of depression, a contraction in the amount of money can and will pull prices down from the peak of a period of expansion and speculation. If banks have expanded to the very limit and their reserve ratio is at the minimum required by law or sound banking, any reduction in the amount of actual cash, whether it appears first in circulation or in the bank reserves, such as would be caused by retirement of paper or token money or exportation of gold, will force a proportional decline in bank loans and investments and bank deposits, and hence a decline in prices. In the absence of an increase in the velocity of circulation of money or bank deposits, or a decline in the physical volume of trade, the decline in prices must be at least as rapid as the decline in the quantity of money and bank deposits, but it may be much more rapid, and is in fact likely to become so, as the panicky fear of further price declines develops and destroys the desire to buy, and so reduces the velocity of circulation of money and bank deposits.

It has already been stated that during periods of rising prices and prosperity people become more eager to buy and during periods of declining prices less eager. This implies, of course, a demand for a larger quantity of goods during the period of rising prices, and more goods can be sold if they become available. They do in fact become available. When the quantity theorists argue that the quantity of goods produced, transported to market, and offered for sale cannot be increased merely by increasing the quantity of money, because the physical volume of production and trade is limited by the capacity of plant — by the land, labor, and capital equipment of the country — they leave out of consideration that at all times, except at the peak of periods

of prosperity, and sometimes even then, there is idle land, idle labor, and idle capital. When the extra money and the extra bank credit lead to rising prices, business becomes more prosperous and business men endeavor to increase output; land, labor, and capital become more fully employed. Physical volume of trade, the T in the equation of exchange, expands substantially, as much as 25 per cent or more, perhaps, and part of the power of the increased quantity of money and credit is exhausted in earing for this expansion in trade, and not all of it remains available for foreing a rise in prices. Similarly, during periods of falling prices, output is restricted because of declining profits and opportunity for sale, and the whole force of the blow of the restriction of the quantity and velocity of circulation of money and bank deposits must not be borne by prices. Part of it is absorbed in the declining physical volume of production and trade. Here, too, the quantity theory of money must be adjusted to the abnormalities of the business eyele. Because of substantial changes in the ratio between money and bank deposits, in the velocity of circulation of money and bank deposits, and in the physical volume of trade, during the ups and downs of the business cycle, prices do not necessarily move in close conformity with the quantity of money, but largely independently of it. For this reason it is extremely doubtful that prices can be stabilized by stabilizing the quantity of money, unless stabilizing the quantity of money will at the same time bring an end to business cyeles.

Thus far the criticism of the quantity theory has been directed primarily at casting doubt upon the probability that an increase in the supply of money tends strongly always to *cause* a proportional rise in prices. The other phase of the controversy between the quantity theorists and their opponents, namely, the question of whether prices, rather than being determined by the quantity of money and bank deposits, are actually the determinants of the quantity of money and bank deposits, has not directly been touched upon. When, however, it is admitted that bank credit during the various phases of the business cycle can vary independently of the quantity of money, the conclusion can hardly be avoided that, within limits, changes in prices may affect the amount of bank deposits, and hence the total amount of money plus bank deposits. If during the depths of a depression, when banks have enormously contraacted loans and investments and hence deposits until they have great excess cash reserves, something occurs to stimulate confidence in certain quarters that a shortage in certain commodities is impending — a crop scare in wheat, for instance — a buying wave may develop and the price of wheat will rise. This rise may take place

quite independently of an increase either in the amount of money or bank credit — in its early stages at least — merely by an increase in the velocity of turnover of bank deposits. As soon, however, as the rise is under way, millers, who must buy wheat on credit, require larger loans at their banks, and this expansion in loans is translated through the ordinary processes of banking into an expansion in deposits. A war scare may generate a widespread rise in commodity prices leading to a great increase in loans and deposits in this way. The opponents are, therefore, justified in contending that a rise in prices may be the cause of an expansion in bank deposits and not merely the result of such an expansion. They might safely carry the argument even further and maintain that a rise in prices can cause an increase in the supply of money itself — provided that by money is meant, not gold, but paper money. Suppose a wild speculation for a rise in the prices of commodities has followed immediately after a serious depression. Expansion in bank loans and deposits follows the rise in prices until the cash reserves of the banks are dangerously low. Thereupon Congress either permits the banks to print more bank notes or itself provides for the issue of government paper money to help the banks maintain or increase their cash reserve ratio. If all this is true, it might seem that the quantity theory of money is damaged by this criticism beyond all hope of repair. But let us see what remains of it.

15. CONCLUSIONS

Granted that the rise in prices may under certain circumstances come first and generate an increase in bank deposits, and even in bank notes and government paper money, it still remains true that the rise cannot continue without this increase in bank deposits and the increase in money. If the banks and the Government refuse to permit the expansion, the rise in prices cannot go on. Not an unimportant point.

Granted that a rise in prices may lead to expansion of bank deposits and to the issue of additional bank notes and government paper money, it cannot cause an expansion in the quantity of the primary money, gold. If we are speaking of expansion within a single country, like the United States, with no corresponding expansion and rise of prices in other countries, the rise in prices will cause the export of gold and a decrease in the gold supply, not an increase, because in this case gold becomes relatively more valuable in foreign countries than in the United States. The expansion cannot continue without driving practically all gold out of the country unless an embargo is placed on gold exports, and the country will be driven from the gold standard, because the gold

reserves of both the Government and the banks will become insufficient to maintain gold redemption of the paper money.

If we are speaking of the world at large, a rise in prices cannot cause an increase in the supply of gold, because the world supply can only be increased by increasing world production, and when prices are rising the value of gold is falling, and a fall in the value of gold causes a decline and not an increase in the annual rate of production, a fact that has had ample illustration in recent times.

It is a plain absurdity, then, to talk of rising prices increasing the amount of money, if by money we mean, not merely paper money, but primary money.¹ The case for the quantity theory of money may now be summarized as follows:

Beginning with a time when bank deposits are so expanded that the cash reserve ratio of the banks is at a minimum, there can be no further substantial rise in prices without a substantial increase in the quantity of money, unless there is a substantial decline in the physical volume of production or a radical change in the banking system permitting more economical use of bank reserves, or a change in the habits of the people causing them to keep less cash in circulation or to increase their turnover of their bank deposits. A substantial increase in the amount of paper money, which may be used as bank reserves and as pocket and till money, without a similar increase in the amount of primary money, gold in gold-standard countries, is dangerous and is likely to drive the country onto a paper-money basis, which is usually disastrous.

If, when bank credit is fully expanded with relation to the amount of money, a reduction in the amount of money occurs, either by the retirement of paper money or the export of primary money, a decline in prices will be inevitable, unless some other change, such as that suggested in the preceding paragraph, takes place, and the fall in prices may gain momentum and far outrun the decrease in the quantity of money.

An increase in the quantity of money between the peak of one period of credit expansion and the next will permit, other things remaining the same, a proportionally higher price-level to prevail during the next period of expansion. Similarly, a reduction in the minimum cash reserve requirements of the banks will permit a higher price-level to prevail.

If, between the peak of one period of credit expansion and the next, the physical volume of production has increased in greater proportion

¹ A possible exception is when the price of an important exportable commodity, like wheat in the United States, rises because of a short crop in foreign countries. This might lead to gold imports by increasing the favorable balance of trade.

than the quantity of money, the price-level at the height of the second period of expansion will be lower than at the height of the first period. Making due allowance for the abnormalities of the various phases of the business cycle, if, over a long period of years, the quantity of primary money does not increase in proportion to the physical volume of production and trade, the price-level must fall; and if the quantity of primary money increases more rapidly than the physical volume of production and trade, the price-level will rise. Abundant evidence to support these conclusions, arrived at by deductive reasoning, may be found in the statistics of the production of gold and the physical volume of production and trade over the period from the discovery of the gold mines in the New World down to the present time. Periods of abnormally large production of gold — and silver, when silver has also been used as primary money — have been periods of rising prices. Periods in which the physical volume of production in agriculture and manufacturing has outrun the increase in the total quantity of primary money have been times of gradually falling prices.

- ✓ *Note:* Certain English economists approach the problem of the determination of the value of money, or the general level of prices, from a point of view differing from that represented by the equation of exchange, MV plus $M'V'$ equals PT . It does not seem to the writer that a discussion in detail of the equations of the English school would throw enough additional light on the subject to justify distracting the student's attention from the fundamental principles just discussed in connection with the equation of exchange considered. The English writers consider the proportion of the people's real incomes which they on the average hold in the form of money as an important factor in the determination of the value of money, a factor which apparently is not included in the equation MV plus $M'V'$ equals PT . Close analysis reveals, however, that this factor is represented in the equation of exchange by V in respect to money and V' in respect to bank deposits. When this is taken into consideration, the difference between the two methods of approach to the problem is not so great as might at first appear. Students interested in what is called the "cash-balance" approach may consult the works of J. M. Keynes and A. C. Pigou. A brief comparison of the two methods of approach may be found in Frederick A. Bradford, *Money*, chapter 10.

CHAPTER V

CHANGES IN PRICES

1. WHY INFLATION IS POPULAR

IN THE chapter on The Functions and Qualities of Money some of the evil consequences of price changes were discussed to show the importance of stability of value in the money used as a standard of value and medium of exchange. We must consider this subject further. However desirable stability in the value of money may be, and however certain it is that a persistent and marked increase in its quantity will eventually cause a decline in its value and a rise in prices, to be followed almost certainly by a disastrous financial crash, it is, nevertheless, true that a great many men are naïve inflationists, who believe that their country can never have enough money, and who would view as an absurdity the idea that it might have too much. The only way to change their opinion on the subject may be to let them live through a period of calamitous inflation and the financial chaos that follows in its train.

Why many persons who have made no great study of money and banking are likely to favor inflation of money and bank credit is not hard to explain. In the first place, they confuse money, the medium of exchange, with wealth. They know that the more money they have the more things they can buy. More money in hand or in the bank means for them more food, more clothing, more furniture, a bigger and better house, a more luxurious automobile, and so on without end. If they obtain their money by working for wages, and find their employment irregular and wages low, they conclude that the reason for this unhappy state of affairs is the lack of sufficient money in the hands of business men to give them steady employment at good wages. If they are in business for themselves and find sales slow and prices for their products too low for their liking, they conclude that there is a lack of money in the hands of the buyers. If they run short of ready cash and are told, when they try to borrow, that money is "tight" and that they cannot have a loan at all, or only by paying a substantial rate of interest, they conclude once more that there must be a great shortage of money in the country.

The naïve inflationist, it should be noted, is not a quantity theorist. He wants more money, not to raise the price-level, but in order to increase his buying power, his selling power, or his borrowing power.

Although he may have in mind the notion that with more money in the country he will be able to draw higher wages or get more for his own product, he illogically leaves out of account that others will be able to do the same, and that with higher prices all around, the increase in the quantity of money will be offset by the higher prices that must be paid for goods and services.

In addition to the naïve inflationist who can always be counted upon to support legislation to provide more money, there is the somewhat more enlightened man who grasps in a broad way the significance of the fact that expansion of money and bank credit means higher prices, and urges such expansion in order to profit thereby. Debtors, of course, have a very real and selfish interest in a rise in prices, or a decline in the value of money, because this makes it easier for them to pay their debts. But there is a widespread belief, almost a general conviction, that rising prices are conducive to prosperity. It is for these various reasons that legislation providing for expansion of money and credit is likely always to be popular, and legislation designed to prevent expansion or to compel contraction is likely to be extremely unpopular. The monetary history of the United States consists in no inconsiderable part of details of projects for expanding money and bank credit, some of which achieved their purpose and some of which were defeated with great difficulty. Legislation which has been designed actually to force a contraction of the currency has almost invariably been foredoomed to defeat. Let us now consider the gains and losses that may reasonably be expected to accrue to various classes of people from rising or falling prices, and observe what justification, if any, there is for the general predilection for rising prices and distaste for falling prices.

2. BUSINESS PROFITS WHEN PRICES ARE STABLE

For the purpose of the present analysis persons concerned with price changes may be divided, first, into the two classes, business men and their employees, and secondly, into the two classes, debtors and creditors. These four classes, be it noted, are not logically distinct, composed, that is to say, of four distinct sets of persons. A man may be either an employer or employee, and at the same time both a debtor and a creditor, owing money to someone while someone else owes money to him. In fact, this is frequently the case, and this is a cause of serious trouble in periods of rapidly rising or falling prices.

Consider first the business man, employer of labor. He may be quite justified in believing that an increase in the quantity of money in circulation, whether coming from the gold mines, the government

ing press, or the banks of issue, will promote his prosperity by permitting him to sell a larger output of goods at higher prices. One of the most noticeable effects of rising prices engendered by an expanding currency is the stimulation to business that it brings. More money is offered for goods and services, not merely because there is more money in the country, but because, once a rise in prices is under way, both producers and consumers buy more eagerly and more promptly than before to anticipate a further rise in prices, and thus speed up the velocity of circulation of money and bank deposits. Business men, experiencing a growing demand for their products at rising prices, are likely to see their profits grow by leaps and bounds, even though suffering at the same time an increase in the costs of production as a result of rising prices of the things they must buy.

We cannot here undertake a thorough discussion of the theory of business profits nor of all the varied phenomena and sequences of the business cycle, but we must touch upon some of the more significant aspects of these subjects. Essentially, business is buying to sell at a profit, whether it be merchandising, mining, manufacturing, transportation, or what not. In all branches of industry goods and services are bought and goods or services, or both, are sold, the business man always hoping to sell his product at a profit; that is, for more than he pays for the goods and services from which or with the aid of which he produces it. But when competition prevails in any industry, the value of the product tends constantly to fall to or even below the cost of production, so that the business man may make no profit, and may actually suffer a loss. In fact, it may be demonstrated, by deductive reasoning, in a fairly conclusive way that if interest on a business man's own capital and fair wages for his own labor be included as costs of production, as good accounting practice requires, the business man of average ability and average luck will make no profits at all under normal conditions. During a period of persistently rising prices he is likely to make good profits and during periods of declining prices he is likely to suffer loss.

Consider what would be implied by a state of business permitting the average business man to make profits year in and year out. This would mean that men of mediocre ability would find things so nicely arranged that they could always buy goods in one market and turn around and sell these goods in a different place, in a different form, or in a different combination, at a price so much higher as to more than cover the cost of the operations involved. The situation would be quite analogous to being able to buy wheat on the grain market, with the assurance of always being able to sell it at a profit, or of buying stocks

at a low price, with the certainty of selling them at a higher price. But actually on the grain and stock market profits are not assured; neither are they in business operations.

Profits are not a reward, as many business men seem to think, to which the average business man is entitled by the mere fact that he is in business. They are rather a reward for risk-taking and superior managing ability. The business man far above the average, having all the qualities of a good business man, including good judgment, foresight, and administrative ability, may gain a profit because he has these qualities. The business man of average ability or less than average ability may make profits by taking risks involved in price changes, fluctuations in demand, or other conditions, if luck favors him, but he must accept losses as a consequence of these risks if chance turns against him. Business men of extraordinary ability may make large profits and become millionaires without enjoying unusually good luck. If great good luck is combined with unusual capacity, a multimillionaire is likely to be the result.

Naturally, most men are not above the average in ability, but are only average men or below. Business men who are making no profits or who are suffering losses are then always in normal times in the majority. These things being so, the general run of business men, particularly the small business men with limited capital, are a pessimistic lot when the general level of prices is stationary or falling. Sales seem slow, prices are dragging along at cost of production or below, profits non-existent. Under such circumstances a rising price trend is as cheering as sunshine after a shower.

It has already been stated that rising prices act as a stimulant to business, promoting the prosperity of business men and increasing their profits. It remains to show why rising prices bring such delectable results to the entrepreneurs — why the higher prices for the things which the business men buy do not fully offset the higher prices they receive for their products, leaving their profits, or their losses, unchanged.

3. RISING PRICES INCREASE PROFITS

As indicated in the preceding section, competition among business men tends to keep the price of the product so low with relation to the prices of the cost items, labor, raw materials, machinery, and supplies, that the average business man makes no profits. The appearance of a gap between costs and prices at once sets in motion forces that tend to close it. Profits tempt the business men to expand output, thus increasing the demand for their cost items and raising prices, and in-

creasing the supply of their product, thus causing a fall in prices. But a general and persistent rise in prices made possible by expansion of money and bank credit tends to keep the gap between prices and costs open for a considerable period and presents splendid opportunities for reaping business profits even to the entrepreneur of mediocre ability.

When additional money or bank credit pours into circulation, it tends first of all to bring a buying movement among consumers rather than among producers; business men catering to the demands of the ultimate consumers experience an increased demand for their products — they find that they can sell in larger volume and at rising prices. When these favored business men expand output to take advantage of the better market, their expansion does not at once entail a rise in costs proportionate to the rise in the price of their products; therefore they enjoy for a period, not only a larger volume of sales, but a larger profit per unit of output. It takes more or less time for expansion in any industry to bring about such an increase in demand for all the items entering into its cost of production that the rise in the prices of these various items will represent in the aggregate an increase in costs equal to the increase in the value of the product. Unless the rise in price of the product has been foreseen by many producers in a given industry, none of the things they buy will rise in price as soon as their product rises in price, except possibly such items as are bought also by business men in other industries which have experienced somewhat sooner an increased demand for their products.

But when the expansion of a given industry continues in response to a growing demand at higher prices for its products, it will inevitably lead to a rise in the prices of the goods and services which the producers must now buy in larger volume, since the sellers of these goods and services are in a position to take advantage of the increasing demand. This increases the costs of the first industry, but it brings prosperity and growing profits also to the other industries from which it buys. These in turn temporarily enjoy rising prices and larger volume and greatly enhanced profits because of lagging costs. From this second group of industries the prosperity spreads to still others in a similar way in ever-widening circles until the whole industrial field, with some possible exceptions, is embraced.

In a period of rising prices not all cost items — and this is an extremely important point — tend to increase in price at the same time or at the same rate. Note why this is true.

There is a tendency in practically every industry to expand plant and equipment beyond the point where the normal demand for the product

is sufficient to permit all plants to operate at capacity. Except in times of unusual activity there is likely to be 10 per cent or more of unused capacity. This overexpansion, if it may properly be so called, results from overoptimism of some producers, from wise planning for future increase in business, from occasional periods of abnormally great demand, and from various other causes. The excess capacity makes possible a substantial increase in output without the construction of additional plant and equipment. Not only, therefore, does the average producer not have to pay for additional plant and equipment at higher prices when he begins to expand during a period of increasing demand, but he does not have to buy any additional plant and equipment at all. If some producer leases instead of owning his plant and equipment, the rental will probably have been fixed in advance for a period of several years and he will experience no increase in costs from this source for some time. If he is operating on borrowed money, and has obtained his funds on a long-term loan, as by a bond issue, this cost item will remain fixed until the loan expires. Insurance and taxes will respond tardily to a rise in prices.

Wages might be expected to rise promptly during a period of expanding industry and trade and general rising prices, since wages are not fixed by long-term contract; substantial expansion of output also requires a substantial increase in the number of persons employed. Statisticians have found, however, that wages do not in fact rise as promptly as prices, but tend to lag considerably behind in the upward movement. This seems to be largely the result of the large number of men ordinarily unemployed at the beginning of a period of rising prices. It takes a considerable increase in employment to absorb the unemployed, and so long as many men are without jobs, those who are employed hesitate to demand an increase in wages, since, if they do demand it, their employers may discharge them and hire new workers from among the ranks of the unemployed.

Finally, depreciation of plant and equipment, which is a substantial cost item if properly calculated, does not increase materially, if at all, with more complete utilization of existing plant and equipment. Thus, during the early stages of a period of rising prices the average business man, enjoying a substantial rise in the price of his product and selling a larger volume of goods at the higher price, while some of his cost items remain unchanged, and most, if not all, of the others are lagging behind the rise in the price of his product, sees his profits growing perhaps beyond all his expectations, and concludes either that rising prices are a blessing, or that he is a most extraordinary man, or both. It will take a

great deal to convince him that expansion of money and credit is not a good but an evil.

4. RISING PRICES CANNOT PRODUCE PERPETUAL PROSPERITY

Unhappily, rising prices cannot produce perpetual prosperity even for the business man unless they are to go on rising forever, since costs, although they may lag behind prices in the upward movements, are always in the process of catching up, and will soon overtake them if the rise of prices is halted. But a never-ending, uninterrupted rise in prices is a practical impossibility. If the rise in prices is one based primarily upon an increase in the supply of primary money, gold or silver, it must be the result of the production of gold and silver at such a great rate as to permit the total stock of money to increase persistently more rapidly than the physical volume of trade or the production of commodities and services in general. This would involve the highly improbable state of affairs that, regardless of the steadily declining value of gold and silver in terms of other commodities, relatively more and more labor was being applied to the production of gold and silver and less and less to the production of other things. This is the reverse of what naturally tends to happen in the absence of discoveries of new and richer gold and silver deposits. Normally, when prices rise, the production of the metal used as primary money declines. This was the case, for instance, during the World War period of high prices. It is hardly to be expected that new and richer gold deposits will constantly be in process of discovery so that production of gold might continue indefinitely to increase in the face of its decline in value.

If the rise in prices has been brought about primarily by the issue of more and more government paper money, it cannot go on forever, since eventually the point will be reached where it becomes impossible for the Government issuing such money to redeem it upon demand in gold. The money therefore becomes merely scraps of paper, in which confidence wanes even more rapidly than it increases in quantity, until it finally becomes worthless in trade and suffers repudiation by the Government that issued it. If people could be induced to go on accepting these pieces of paper for things of value without the promise of redemption in gold or other primary money, there would be a possibility of maintaining an endless rise in prices by printing this kind of money in larger and larger denominations. But even here great difficulties would eventually be encountered and new symbols for astronomical numbers would have to be invented. Monetary history affords no instance of the successful use of that kind of money.

If the rise in prices is based primarily upon the expansion of bank credit, and not upon an increase in the quantity of money, the banking system will eventually collapse for lack of adequate cash reserves by means of which the banks may maintain prompt redemption of bank notes and payment of checks upon demand. The reasoning in full by which the foregoing statements concerning the inevitable collapse of prices forced up by government paper money or bank credit may be supported must be deferred to later chapters.

Theoretically, the most promising method of bringing about a perpetual rise in prices is the method of the gradual devaluation of a metallie unit of value. An example of this would be the gradual reduction in the gold content of the dollar by an endless succession of congressional enactments and presidential proclamations.

Even if it were possible so to manipulate the supply of money and bank credit as to permit an uninterrupted rise in the general level of prices, it is practically certain that the average business man would not continue making profits indefinitely and that the level of prices would not keep on advancing. The upward price movement carries within itself the seeds of its own destruction, and more particularly so if based upon expansion of government paper money and bank credit rather than gold.

However great the prosperity of the average business man may become during the early stages of a period of rising prices, the degree of his prosperity tends to diminish because of the tendency of costs to follow the rise in prices and finally to overtake it. It is the lagging rise in certain costs as compared with the rise in other costs and the price of the product, the very prop of his temporary prosperity, which tends almost inevitably to bring his eventual downfall. Because the cost items represented by labor, plant and equipment, depreciation, insurance, taxes, and the like, lag behind the rise in prices, business men compete so much the more eagerly for immediate possession of the raw materials required to expand their output, and thus comparatively early in the period of prosperity they drive up the prices of their raw materials even more rapidly than the price of their product rises. Then one by one the other cost items fall in line with the rise. Labor becomes fully employed and workers demand an increase in wages. Rental contracts must be renewed and rents rise. Old equipment wears out and must be replaced with new. Government expenses increase as prices rise and taxes become more burdensome. Plant valuations are increased and insurance and depreciation become larger items. In many cases plant capacity has become too small to meet the demand for the product and business

men undertake pretentious expansion of plant and equipment on borrowed money. Rising prices of materials and labor involve more money tied up in inventory, and bank loans may be resorted to as an aid in carrying the larger inventory. In the very midst of his plant expansion which is expected to yield him large additional profits, the business man suddenly finds costs rising unexpectedly high. Building labor and building materials, hitherto lagging behind the general rise in prices, soar to almost prohibitive heights. Then the unpleasant fact becomes clear. Total costs have risen above market price. The business man is losing money. To make matters worse, some of his creditors demand to be paid, new loans are hard to obtain, and are to be had, if at all, only at very high rates of interest. He now finds himself in that stage of the business cycle called the crisis. The situation is bad, and it is likely to get rapidly worse.

5. THE ROLE OF THE SPECULATOR

When the inevitable end comes to the period of rising prices, prices fall, and the fall tends to be much more abrupt than the rise. It might seem that, with a great rise in prices generated by expansion of money and credit and the stimulus of growing profits, the price-level would merely become stabilized and not fall when expansion of money and credit ceased and business profits tapered off and disappeared. But, as shown in the preceding chapter, expansion of money and credit does not necessarily force a rise in prices, but only permits it; and when the crest of the period of expansion has been reached, the large volume of money and bank credit alone cannot hold prices at the high level. When any considerable number of people cease buying at the same time that a large number begin to sell, the equilibrium between demand and supply at the old price-level is upset, and prices must drop regardless of the quantity of money and credit available. And this is precisely what happens when it becomes obvious that the rise in prices has been checked — demand declines, supply increases, prices fall. Here the speculator in commodities, in real estate, and in corporation stocks plays an important rôle.

During the period of generally rising prices, a great deal of speculation in commodities develops, not only among professional speculators on the commodity exchanges, but among the general public, who are induced in large numbers to take a flier in wheat, corn, or cotton, or any other commodity dealt in on the organized markets and seemingly offering a safe road to wealth without labor. Another important group of speculators in commodities are business men who, observing the rising trend of prices, lay in larger supplies of raw materials than required for

current use, often acting on the comfortable assumption that this represents not speculation in commodities, which they might publicly deplore, but merely far-sighted statesmanship in business. These speculators widen the field of speculation in commodities considerably because they are in a position to speculate in commodities not handled on the regular organized commodity exchanges. The more persistent and pronounced the rise in commodity prices becomes, the more avaricious and reckless grow the speculators. In order to increase their profits they buy not merely what they can pay for with their own funds, but they borrow money from the banks to expand their operations, or buy on margin, paying brokers only a fraction of the amount of their purchase, leaving the broker to supply the remainder, usually in large part through bank loans.

Similarly, speculation develops in real estate. It can be demonstrated by economic theory that a rise in commodity prices and in general costs of construction justifies a proportionate increase in real estate valuations, provided only that it is assumed that the rise in commodity prices and costs of construction are more or less permanent and not mere transitory phenomena, or that a further rise is just as probable as a fall. At any rate, the rise in real estate prices ordinarily accompanies the rise in commodity prices, and the speculation in real estate sometimes outdoes the speculation in commodities. Real estate speculators, no less than commodity speculators, in order to expand their operations for the rise, operate in large part on borrowed money, giving mortgages on their real estate as security for their loans. If the banks are sufficiently unsound in their management, as they usually have been in the United States during periods of rising prices, they will advance many of these real estate loans. Since there seems to be general agreement that it is safe to lend on real estate mortgages half the value of the mortgaged property, the higher real estate values soar, the greater becomes the possible aggregate of loans, and the greater the aggregate of loans becomes, the greater becomes the amount of money available for investment or speculation in real estate at still higher prices.

But the greatest and most spectacular speculation in the United States tends to be that generated on the New York Stock Exchange, where are listed the common and preferred stocks of the hundreds of corporations whose profits and net earnings expand miraculously during a period of rising commodity prices. Since market prices of securities tend to be inordinately addicted to capitalizing the current rate of earnings, prices of stocks, particularly common stocks, rise violently when once it becomes evident that corporation earnings are increasing.

Here three distinct groups of speculators compete with one another for possession of the stocks in a rising market — the professional speculators, the general public, and the insiders, or those having inside information on the earnings of the corporation because they hold some responsible position in the management. We are not here concerned with the question of whether or not the insiders rig the market and dupe the gullible outsiders, or whether the professional bulls and bears shear the amateur lambs or trap the public pigs, and other zoölogical manifestations, but only with the fact that speculation rages on a rising market, and rages in large measure with the aid of borrowed funds — borrowed for the most part from the banks by speculators directly or by brokers for speculators.

6. THE POSITION OF THE BANKS

All the loans made by banks to speculators in commodities, in real estate, and securities tend to become deposits either in the banks that make them or in other banks, and thus expansion of bank deposits and a rising speculative frenzy mutually feed one another. More bank loans, more bank deposits, more buying, higher prices, more bank loans, more bank deposits, more buying, higher prices, and so on a most delightful rising spiral of cause and effect.

Prices, it has been stated, cannot keep on rising forever; neither can the easy profits of business men of mediocre capacity, arising out of nothing except a more or less persistent rise in the price of their products temporarily keeping ahead of the lagging costs of production. The break may come as a result of such overexpansion of bank loans and such a consequent decline in the cash reserve ratios of banks that some of the weaker banks find themselves unable to pay cash on demand on all checks presented for payment. One bank failure tends to lead to others, since, when one bank suspends payment on its checks, depositors in other banks take alarm and "runs" result. Even soundly managed banks can easily be ruined by a panicky demand of a large part of the depositors to be paid in full at once, since no bank is likely to have on hand normally enough cash to meet such demands, most of its funds being invested in loans not maturing within thirty days, and in bonds and other securities.

Once depositors all over the country become panic-stricken and resort to runs on banks, banks as a whole desire to become "liquid." They make loans sparingly, and demand that loans already made be promptly paid at maturity. Contraction of bank loans on a broad front forces a decline in the prices of commodities, securities, and real estate,

because it prevents some persons from buying who would otherwise buy and it compels some to sell who would otherwise not sell. A substantial decline in demand coinciding with a sharp increase in supply means, of course, a fall in prices. But this is only the beginning of what tends to become a veritable *débâcle*. The decline in the prices of securities impairs the value of the securities held by brokers and bankers as collateral for loans, and the borrowers are requested to pledge additional collateral or pay off part of the loans. Many will be unable to do either, and their securities will be sold on a market with few buyers. The result will be a further sharp fall, endangering the security of other bank loans, leading to further calls for additional collateral or payment of loans, leading to further forced selling, and so on, with the circle of cause and effect between bank loans and prices, whirling now in a disastrous reverse, producing, instead of a delightfully ascending spiral, a disastrous descending one.

Similar developments occur among the speculators in real estate and commodities and their banks. Despite all the banks can do in calling old loans and restricting new loans, they are in constant danger of being stripped of their cash reserves. It should be borne in mind that when a bank loses \$1000 in reserves by the actual withdrawal of that much cash, it cannot make good the loss simply by calling a \$1000 loan. Loans are normally paid, not in cash, but in checks. If the borrower whose loan is called has a deposit in the bank which is demanding payment, he will draw a check against this deposit. Instead of gaining \$1000 in cash, then, the bank merely gains a reduction in its required cash reserves, because it has thus brought about a reduction in its deposits. The result is not likely to be different if the borrower sells some stocks, commodities, or real estate, in order to pay off the loan. In this case he is likely to receive a check in payment drawn on some other bank, and this is what he turns over to his own bank. But when this bank presents this check and other checks it receives to the other banks for payment, it will find that other banks hold checks drawn against it to offset or cancel these checks, in whole, or in part, or perhaps more than offsetting them.

Only that bank will actually gain cash reserves which is calling loans and restricting credit most ruthlessly, and thereby is in a position to collect more checks from other banks than other banks are collecting from it. What one bank gains another loses. In fact, the banks as a whole, can increase their cash reserves but little, if at all, by this process, unless some provision has been made in the banking system for the issue of additional bank notes. Regardless of the futility of the process, how-

ever, it goes drastically on for two fundamental reasons. First, any bank which does not keep pace with the rest in credit restriction finds its cash reserves drained away because it has fewer checks to collect from other banks than other banks have to collect from it, and must pay the balance in cash. Secondly, with the crumbling of prices in stocks, commodities, and real estate, it feels impelled to demand payment of many loans when the collateral pledged to secure them is no longer worth the amount of the loan. While the banks tend to gain no net addition to the cash reserves by this process of deflation, they do increase their cash reserve ratio by reducing deposits while maintaining their cash reserves. But if ten per cent is considered an adequate cash reserve ratio, it follows that, to make good a shortage of \$1 in actual cash reserves, the banks must on the average reduce loans and investments, and thus indirectly deposits, by \$10. A leakage of \$100,000,000 of cash into circulation as a result of bank runs and hoarding requires a reduction of \$1,000,000,000 in loans and deposits. It is this principle that makes the process of deflation, once it has begun, so drastic. This relation between cash reserves, loans, and deposits may not be clear to the reader at this point, but it will be explained in greater detail in later chapters on banking, and the discussion here must be considered merely provisional.

7. EFFECTS OF RISING COSTS

The first break in the prosperity engendered by rising prices may come from other causes than bank failures resulting from overexpansion of banks and inadequate cash reserves. The abnormal profits of business concerns, it has been shown, result from the aggregate of costs, in the early stage of the rising-price period, rising less rapidly than the prices of the products. But the costs are constantly in the process of catching up with prices, and tend ultimately to do so, for reasons already stated. Whether they do so or not for all industries, there is bound to be trouble. If the costs of all industries rise finally in proportion to their prices, profits of those which have enjoyed abnormal profit will sag, and the prices of their securities will sag on the stock market and start perhaps a stock market crash. Moreover, sagging profits will tend to slow down the rate of expansion, and lead to a decline in the rate at which industries are purchasing materials, supplies, and equipment, tending to cause a decline in the prices of the things which they buy. This may bring about a general decline in commodity prices and in real estate.

If the costs of some industries fail to rise in due course, this means only that the prices which others receive for their products are not rising

in proportion to their costs, or that the wages of labor are not rising in proportion to the cost of living. This is true because the costs of every industry consist of the prices of the things which they buy from other industries and the wages of labor. Now, if the prices of the products of some industries do not rise in proportion to the persistent rise in their costs of production, these industries become depressed, lose money, become poor buyers, and find themselves unable to meet their obligations. Failures and receiverships will unsettle the stock market, and a decline in the demand for various products will unsettle prices of commodities. If the wages of labor rise less than the cost of living, the demand for consumers' goods must decline and the profits of those industries catering to the consumer suffer. With the demand for their products declining, they produce on a smaller scale and buy less freely. This will tend to unsettle both the security markets and the commodity markets.

8. FALLING PRICES GAIN MOMENTUM

Regardless of the source of the immediate impulse that turns the scale from rising prices to falling prices — bank failures, business failures, declining profits, shrinkage of consumer buying power — once the decline is under way it grows from its own momentum. Business failures cause bank failures; bank failures cause business failures. Falling stock prices force liquidation in the real estate and commodity markets. Falling commodity prices bring on liquidation and forced selling in the stock market. The more pronounced and persistent the general decline becomes, the more eager speculators become to unload what they own, and the greater becomes the volume of short selling on the stock and commodity markets, thus adding to the supply and forcing down prices still further. Forced selling and voluntary liquidation of real estate, commodities, and securities bring such a drastic and persistent decline in prices that confidence tends to be absolutely destroyed.

To make matters worse, business men resort to "hand-to-mouth buying." Observing the shrinking prices, manufacturers hesitate to buy raw materials; wholesalers let their warehouses become empty; retailers let their shelves become bare; and even consumers hold off making purchases. Why buy now when you may buy later at lower prices? Uncertainty plays a part. The wage-earners fear to spend freely because they fear for their jobs; retailers buy less freely because they are uncertain of sales; likewise wholesalers and manufacturers. Naturally, factories restrict output or close down; unemployment increases; and wages are forced down when the declining demand for labor gives the employer the upper hand. Payrolls being thus drasti-

cally cut down, the buying power of the working class, by and large the main support directly or indirectly of all industries, is reduced, further cutting down demand for goods and services, and deepening the depression. Such are the disheartening ultimate consequences of a rise in prices growing out of expansion of money and bank credit. The greater and more prolonged the rise in prices, the deeper becomes the ensuing inevitable depression and the more complete the prostration of industry becomes before recovery is possible.

9. FALLING PRICES AND THE BUSINESS MAN

In the foregoing section the nature of the inevitable financial and industrial collapse that follows upon the heels of a general rise in prices has been rather inadequately described and its causes in a fashion set forth. It remains to count the costs of the rise and the fall, some of which, but not all, have been indicated in what has just been said. Consider first those business men who, during the period of expansion, with rising prices for their products and lagging costs, have been selling in larger volume at higher profit margins, and have consequently seen their profits sharply increased. When the turn comes, their sales decline and the prices of their products drop. But their costs of production tend to lag behind the drop in prices on the downward movement just as persistently as on the upward movement, and for similar reasons. Their raw material costs, it is true, may decline sharply, but wages tend to lag. To prevent serious labor disputes, employers postpone cutting wages until they can point to falling prices for their products and vanishing profits. Interest charges on loans, taxes, and insurance costs do not decline promptly, and may even rise. Depreciation charges tend to remain constant even though the plant is not operated at capacity. Rentals on leased property do not decline at once and may remain fixed for months or even years. If the depression is severe, those business men who have been operating in large measure on borrowed capital find themselves unable to pay interest charges and are forced into bankruptcy. In some cases current operating expenses cannot be covered, and failure results even though there are no interest payments to be met.

Even those business enterprises do not escape, which have not benefited from the rise in prices, but which actually have suffered, such as public utility enterprises and railroads whose rates are fixed in large measure by law, and consequently tend to go up less slowly than their costs of production. During the rising-price period they may suffer more from rising costs than they gain from an increased volume of business, and during the subsequent collapse they may lose more from a

decline in volume of business than they gain from falling costs. Undoubtedly this has been the case of the American railroads during the period since 1914.

10. THE SPECULATOR WHEN PRICES FALL

That particular group of business men who may be referred to as speculators are likely to be absolutely ruined in the end by the very rise in prices which promised for a time to make them all millionaires. A speculator, it should be noted, may be distinguished from other business men by the fact that he can reap a profit from his buying and selling only by changes in prices of the things he buys and sells. Whether he buys securities, commodities, or real estate, the identical thing he buys must rise in price before he sells to yield him a profit. It is not so with the merchant or manufacturer. The merchant buys at wholesale prices and sells at retail, and if he is shrewd and able in his business operations he manages to reap a gain from the normal difference between wholesale and retail prices; neither set of prices must ordinarily fluctuate in order to permit him to succeed. Similarly, the manufacturer may buy raw materials, labor, equipment, and so on, and by able management turn out products worth more on the market than the aggregate amount of his costs, even though commodity prices have not risen during the interval between the time of his buying and the time of his selling. As already stated, merchants and manufacturers in effect become speculators when they begin to buy larger supplies of commodities than are required by their current operations, hoping to make a speculative gain over and above the ordinary returns from their normal operations.

Spurred on by the possibility of great profits from a strong and persistent rise in prices, speculators constantly tend to expand their operations beyond the limits of safety by operating largely with borrowed money. On the commodity and security markets they buy on margin, adding to their own funds large sums borrowed from brokers, and pledging their commodities and stocks as security for the loans. In the real estate market the speculators borrow large sums and offer mortgages on their real estate as security for their loans. The rewards are phenomenal if the rise in prices continues. If, for example, a speculator, with \$10,000 of his own money plus \$20,000 of borrowed funds, buys \$30,000 worth of wheat, stocks, or real estate, and if the value of his purchase doubles he will have made a profit of \$30,000, or three times the amount of his own capital and he will now have \$4 where he had one before, *if he sells*:

The curse of the speculator, however, is that his confidence increases

with his profits. He is likely to continue operating with borrowed money, and to be in debt when the crash comes. If at this time he has amassed \$1,000,000, he is likely to be involved in further speculations and to be \$1,000,000 or more in debt. If he is carrying \$2,000,000 worth of wheat, stocks, or real estate when the crash comes, and prices decline fifty per cent, he is wiped out. Not only all his profits vanish, but also his entire original capital. It is true that some speculators sell out at or near the top, and thus "salt down" their profits, and some are shrewd enough to make further profits by "selling short" on the stock and commodity markets. But it is impossible for all of them to sell out at the top, since for every seller there must also be a buyer. If only the professional speculators lost fortunes in this process, it perhaps need not be a matter of great concern. But during periods of frenzied speculation hundreds of thousands of persons from all walks of life are drawn into the whirlpool of speculation and ruined in the final crash.

11. THE POSITION OF THE INVESTOR

Nor is this the whole story. The worst feature of the orgy of speculation is that investors as well as speculators may be ruined, and the life savings of thousands or hundreds of thousands may be swept away. The boundary line between investment and speculation and between the investor and the speculator is somewhat indefinite, but it can roughly be drawn as follows:

The investor is a person who with accumulated savings or inherited money buys stocks, bonds, real estate, or other property to hold for an indefinite time as a store of value and a source of income. He is not primarily interested in price changes, but he prefers, of course, to see the price of his purchase rise rather than fall. He is none the less an investor rather than a speculator if he finds it convenient or necessary to make his purchase in part with borrowed funds. He may, for example, be a farmer with only \$5000, but requiring as a condition of successful farming a farm costing \$10,000. He may be an urban workman, with \$3000 in savings which he desires to invest in a home, but the needs of his family may require a home costing \$6000. He may be a salaried employee of a public utility company who is induced to buy a few shares of the stock of his company, yielding a good dividend, on the partial-payment plan. He may be a young business man, who decides to own his own store building, and buys it at a cost amounting to twice his accumulated capital.

Whatever it is the investor buys, he must pay the current market price. If this price has been forced up as a result of a general rise in

prices, it may be unwise for him to buy and go into debt for part of the purchase price. But he may fear that prices are going higher, and he will doubtless be told directly or indirectly by many eminent bankers and statisticians that people are just beginning to realize the true value of property, and that, in view of the long-continued prosperity to come, the bargains to be found on all sides will not long remain available. When the financial crash and the ensuing business depression arrives, the result for the farmer, the home-owner, the merchant, or the partial-payment purchaser of stocks may be disastrous. The value of the property they have acquired with their life savings may fall below the amount of the debt standing against it. If during the hard times they cannot meet payments on the principal of the debt or the interest, their property may be sold, and their savings disappear in the sink-hole of debt.

12. CREDITORS AND FALLING PRICES

If the period of falling prices brings results so disastrous to the debtor class — whether the debtors be business men, investors, or speculators — it might seem that the creditors must profit. And in truth there are possible gains for the money-lenders. If a retired business man, for instance, invests his accumulated savings of, let us say, \$100,000 in real estate mortgages yielding him six per cent, he has an income of \$6000, which at the existing level of prices will buy certain quantities of all the goods and services he requires to sustain a given standard of living. If now prices in general drop fifty per cent, his \$6000 of interest, if his debtors continue to pay it, will buy twice as many goods and services. He can now live twice as well as before, or live just as well as before and save half his income. If the debtors cannot or will not pay the interest, he can foreclose on the mortgages, and thus, as a result of \$100,000 invested in mortgages, obtain possession of property formerly worth, let us say, \$200,000. It is true that the property may now be worth only \$100,000, but, with prices and the cost of living down to half the former level, his \$100,000 worth of real estate is worth relatively just as much as before. In such cases creditors may actually enjoy handsome net advantages from the fall in prices, just as speculators who sell at the top may reap large profits from rising prices.

But this is only part of the story so far as creditors are concerned. It frequently happens that creditors lend such large sums on such slender security that when the crash comes not only are the debtors unable to pay, but there remains available insufficient property for the creditor to seize to cover the debt. It is not uncommon for practically the whole amount of the debt to remain unpaid. Not only do creditors as individuals

thus incur heavy losses, but creditors, or money-lenders, as a class gain the ill-will of debtors as a class. When a very large part of the population of a country is being crushed under a grievous burden of debt, becoming, as a result of falling prices, heavier and heavier in proportion to the debtors' income and property, debtors as a group develop a growing spirit of animosity toward the money-lenders, and blame them for the disaster. Those whom they had considered benefactors when the debt was incurred are looked upon as public enemies and conspirators against the common welfare when payment under hard conditions is due. The creditors demanding payment appear to the debtors merely as so many Shylocks clamoring for their pound of flesh. There arises danger of political and even mob action directed against the money-lenders, and their position is not altogether a happy one whether they are able to collect or not.

13. CREDITORS AND RISING PRICES

Then there is, of course, the other aspect of the case for the creditors. They may have lent their money before the rise in prices. If the retired business man of our previous example had lent his \$100,000 of accumulated savings on real estate mortgages at six per cent, for a long term of years, his income therefrom would remain only \$6000, no matter how high prices and the cost of living went after the loan had been made. If prices doubled, the purchasing power of his \$6000 income would be cut in two. His standard of living in his declining years would have to be reduced. Moreover, the value of his principal would also be cut in two. If the amount of the loans had been one half the value of the property securing them, it would have fallen to one fourth of this value, and if the loans matured during the period of high prices, the sum repaid would buy only half as much property as the sum lent.

Similar consequences would result for all persons who invested their savings in obligations repayable in a fixed number of dollars, such as savings bank deposits, life insurance, building and loan stock, and government and corporation bonds; and such investments represent not only a very large proportion of all investments, but also the savings of people who have invested in such obligations in order to avoid the risks involved in more speculative ventures, such as commitments in corporation common stocks, real estate, or active business operations. They represent in large measure the capital of widows and orphans, and in general the provisions made by retired business men and others against old age. Naturally, if prices fall again after the rise and before such obligations mature, the creditors need not lose any part of their prin-

cial, but during the period of high prices they lose at least a considerable portion of the purchasing power of their current income, fixed in dollars and cents.

14. PRICE CHANGES AND THE WAGE-EARNER

The consequences of price changes have now been considered for business men, or employers, and for creditors and debtors. It remains to consider the consequences for the wage-earning class. It has already been observed, in connection with the experience of business men, that wages tend to lag behind the rise in prices, and to lag also behind the subsequent fall in prices. It would seem, therefore, that wage-earners, finding their cost of living rising more rapidly than their wages, would suffer from a rise in prices, and on the contrary would benefit from the downward movement when their wages fell less rapidly than prices. But the actual results may be quite different

The period of expansion tends in its early stages to absorb into industry many of those unemployed during the preceding period of dullness and to give those who had previously been employed more regular work. The total purchasing power of the wage-earning class may, therefore, be temporarily increased during the period of rising prices, even though wages per hour or day do not rise in proportion to the rise in prices and the cost of living. To what extent this may actually happen depends upon the amount of unemployment that exists at the beginning of the upward move. On the other hand, when the crash comes, workmen in large numbers lose their positions; as many as twenty-five per cent or more may be out of work altogether, and a large portion of the rest have only part-time work. The total payroll of the working class is sharply reduced, and although wages per day or hour may have declined less rapidly than prices and the cost of living, total purchasing power of the wage-earning class, including salaried workers, is likely to be seriously reduced.

15. CHANGING PRICE-LEVELS CAUSE HUGE NET LOSSES

The foregoing analysis of the consequences of price changes to employers, employees, debtors, and creditors indicates that for each class there are losses and gains. Some gain from rising prices and lose from falling prices, while others lose from rising prices and gain from falling prices. It may seem that on the whole these various gains and losses would offset each other, and that for the community as a whole, and even for each class taken separately, a general rise in prices followed by the inevitable fall would not result in a net loss.

Even if this were true, great price changes would still be extremely undesirable, because of the innumerable cases of injustice they involve, and because of the great amount of suffering they impose upon certain classes at certain times. The debtor, who through no obvious fault of his own loses every dollar of his life savings during a fall in prices, is not repaid by philosophical musings on the fact that on the whole and in the long run debtors gain as much as they lose. The wage-earner, whose wife, driven insane by worry when he loses his job and their children are going hungry, hangs herself after strangling the children,¹ gets perhaps little consolation from the fact that he did have regular employment at good wages while prices were going up and that the purchasing power of the dollar of those still employed is rising. The widow, who is reduced to poverty and dependence upon strangers because her little lump of insurance money has been deprived of its capacity to maintain her by the hundred per cent rise in prices, is little inclined to forget her troubles and look upon the brighter side of the picture — the handsome profits enjoyed by business men and speculators.

It is far from true that the losses to each class are offset by gains. A broad view of all the facts indicates that every broad upward swing and downward crash of prices involves huge losses to the community far more than offsetting possible gains to particular classes from the rise and the fall. The feverish expansion of plant and equipment during the rise leads to the construction of plants which are later found to be superfluous. The labor and materials devoted to their construction represent a social loss. The great wave of speculation in securities, commodities, and real estate involves the employment of thousands of clerks in recording innumerable transfers of ownership, whose labor would certainly be more productively employed in other ways. Many able business men, too, have their attention diverted from the careful management of their regular business affairs to following the speculative swings of prices. Those who enjoy unusual profits from the general rise in prices tend to develop extravagant habits of living, which later, in less prosperous times, they may seek to maintain by fraud and theft.

But the worst feature of all is the more or less prolonged period of business stagnation and depression that follows the first sharp crash of the crisis. Factories and mines close. Millions of men are unemployed. Those factories which do not close completely operate with diminished forces of labor and only a few days a week. Expensive mechanical equipment stands idle. Workmen walk the street, without means to buy the goods with which the stores are crammed, and the clerks within

¹ An actual case of this sort was recorded in the newspapers in 1932.

stand idle waiting for customers that do not come. When from five to ten million men are idle for a year or two in a country like the United States, the economic loss of the wasted labor alone is tremendous — five, ten, or twenty billions of dollars, or even more. And this is a dead loss, against which there can be shown no offsetting gain, unless it can be proved that unemployment on a huge scale is normal and can only be reduced by the stimulating effect of rising prices. But there is no good reason for assuming that labor would not always be fairly completely employed in the absence of the disturbance of rising and falling prices. The great army of the unemployed which seems to be given work by the stimulus of the rising prices represents in its major elements merely the backwash of the inevitable fall in prices following the previous rise.

If all these things are true — and most economists would admit that they are substantially true — then stability of the price-level would seem to be an object worthy of the best efforts of business leaders and statesmen. If monetary systems can be devised and managed in such a way as to prevent persistent or violent price changes, then they certainly ought to be devised and so managed. If the quantity theory of money indicates, as suggested in the preceding chapter, that strict control over the quantity of money and bank credit can prevent a disastrous rise in prices, but is seemingly powerless to prevent the ultimate crash which is the inevitable result of the period of inflation, then the business leaders and the statesmen should be alert in preventing the rise by restricting the quantity of money and credit to the amount required to conduct business at the prevailing level of prices. And if the quantity theory of money indicates, as was also suggested in the preceding chapter, that a disastrous fall in prices may be precipitated by a contraction in money and credit even in the absence of a preceding expansion in currency and rise in prices, then serious consideration ought to be given by the powers that be to ways and means of preventing such contraction to the end that it should not take place except when necessary and unavoidable, or the lesser of two evils. In subsequent chapters devoted in part to a brief survey of the monetary and banking history of the United States, we shall see that unfortunately a great deal more of effective thought has apparently been given to promoting expansion of the currency and bank credit and to producing disastrous inflation than to preventing it, and in so far as our discussion strays beyond the boundaries of the United States into the realm of international finance, it will appear that in the world at large, both unnecessary inflation and unnecessary deflation have played a part in destroying the prosperity of nations and spreading misery over the face of the earth.

CHAPTER VI

BIMETALLISM IN THE UNITED STATES

1. COLONIAL MONETARY CONFUSION¹

WE MAY now turn aside from the more purely theoretical discussion of the uses, the qualities, and the quantity of money, and give our attention for a time to the monetary history of the United States. While a discussion of our monetary history might properly begin with the Coinage Act of 1792, which established our coinage system under the Constitution, it will be helpful to begin with a brief description of monetary conditions in the colonies and in the states before the Coinage Act of 1792 was passed. In an earlier chapter we have pointed out that the colonists, through their persistent desire to buy foreign goods exceeding in value that of the exportable surplus of their own products, were constantly confronted with an unfavorable balance of trade which drained out of the country their gold and silver money, and that they tried to make good the shortage of metallic money by declaring such bulky and abundant commodities as wheat, corn, and tobacco legal tender and using it as money. In a later chapter we shall have occasion to discuss also the extensive use the colonists made of paper money as another expedient of supplying themselves with currency at little cost. Despite the free use they made of barter currency and paper money, the colonists managed to retain the use of some metallic money.

What gold and silver money the Colonies had consisted mainly of Spanish and Portuguese coins, the most common coin being the Spanish dollar, or piece of eight reals. The colonists, while using Spanish dollars as a medium of exchange, preferred to keep their accounts in terms of familiar British pounds, shillings, and pence rather than in dollars, and it became necessary, therefore, to place a value on the dollar in terms of English money. If the Spanish dollar had not varied in weight, and if it had not been desired artificially to regulate prices, the value of the dollar in terms of British pounds could have been determined very simply by expressing the weight of pure silver in the dollar as a fraction of the weight of pure silver in the pound sterling, and then reducing this fraction of a pound to shillings and pence. If, for example, the Spanish

¹ Much of the factual material in this section is adapted from Bullock, *The Monetary History of the United States*, pp. 17-20, and 23. Used with the permission of The Macmillan Company, publishers.

dollar had contained just one fourth as much silver as the pound sterling, it would have been worth one fourth pound, or five shillings.

The silver pound was standard primary money in England from 1600 to 1816, or during the whole colonial period and beyond, and during this entire period the pound contained 1718.7 grains of fine silver, and the shilling, the twentieth part of a pound, contained 85.93 grains. The Spanish dollars coined at different dates varied in weight, but the variation in weight was comparatively slight and the true value of the full-weight Spanish dollar in English money was about four and a half shillings.

The colonial lawmakers, however, were not content to rate the Spanish dollar at its true value in British money, but arbitrarily rated it as worth more than its true value of four and a half shillings. Between 1671 and 1697, not less than nine Colonies, according to Bullock, began to advance the rating of the piece of eight, and by 1700 great diversities existed in the rating given in different localities.

A double purpose was achieved by such artificially high ratings of the dollar in terms of the unit of account. In the first place, when a colony increased the rating of the dollar above the rating in surrounding colonies, it temporarily increased the buying power of the coin, and the dollars, drifting to the locality in which their value was greatest, would become more abundant in that colony, thus relieving the scarcity of money. In the second place, when the dollar was thus rated at a larger number of shillings, the possessor of the given number of dollars could pay off a larger amount of debts expressed in pounds and shillings. The first of these two purposes could be achieved only temporarily. Prices within a colony would tend to adjust themselves to the higher rating of the dollar, so that when the rating was increased fifty per cent, prices in terms of shillings would also rise by fifty per cent, with the result that a dollar rated at nine shillings would eventually buy no more goods than one rated at six shillings. Moreover, when the colonies competed with one another in increasing the rating, they mutually destroyed one another's advantage from such increases in ratings.

The diversity in ratings by the various Colonies caused so much confusion that the mother country interfered in 1704 by a proclamation fixing the maximum rating of the piece of eight at six shillings in English money. By this curious bit of financial legislation it came about that the same amount of silver which in England was counted at four and a half shillings was to be rated lawfully in the Colonies at six. In other words, a British pound thereafter was to be equivalent to one and one third pounds of colonial money.

That the proclamation of 1704 did not remain effective in maintaining a maximum rating of six shillings is shown by the report of Robert Morris, Superintendent of Finance under the Articles of Confederation. According to Morris the dollar was rated, at the time he wrote, at the proclamation maximum of six shillings in New England and Virginia, but in North Carolina and New York it was rated at eight, in Georgia, at five, in Maryland, Delaware, Pennsylvania, and New Jersey, at seven and a half, and in South Carolina, where the legislators doubtless aimed at a boundless prosperity exceeding anything known in any of the other Colonies, it was rated at thirty-two and a half shillings.

Besides the Spanish dollar various other coins circulated in the Colonies, including the Spanish doubloon and pistole, the Portuguese moidore and johannes, and the French guinea and pistole. With these various kinds of coins circulating side by side and rated variously in English money, the unit of account, the metallie money of the Colonies was a source of great confusion. This confusion was worse confounded by the extensive use of barter currency made legal tender at arbitrary ratios to silver, and by the innumerable issues of paper money emitted first by the colonial Governments and later by the Continental Congress.

It was only natural, then, that the Continental Congress, the Government under the Articles of Confederation, and finally the Government under the Constitution, should all have undertaken successively the task of establishing a more satisfactory monetary system. Nothing came of the abortive attempts of the Continental Congress to establish a coinage system, and nothing substantial was accomplished under the Articles of Confederation, although during this period two plans for the establishment of a coinage system were prepared, one by Robert Morris, Superintendent of Finance, and one by Thomas Jefferson.

2. THOMAS JEFFERSON'S NOTES ON COINAGE AND THE MINT

Jefferson's plan, as set forth in his *Notes on the Establishment of a Money Unit and of a Coinage for the United States*, contains so much wisdom and exercised such a great influence on the nature of our coinage system as established in 1792 that we cannot make better use of our space than to quote somewhat freely from this interesting document.

In fixing the unit of money these circumstances are of principal importance.

1. That it be of a convenient size to be applied as a measure to the common money transactions of life.

2. That its parts and multiples be in an easy proportion to each other so as to facilitate the Money Arithmetic.

3. That the Unit and its parts or divisions be so nearly of the value of some of the known coins as that they may be of easy adoption for the people.

The Spanish Dollar seems to fulfill these conditions.

1. Taking into our view all money transactions great and small, I question if a common measure of more convenient size than the dollar could be proposed. The value of 100, 1,000, or 10,000 dollars is well estimated by the mind; so is that of the 10th or the hundredth of a dollar. Few transactions are above or below these limits. The expediency of attending to the size of the money Unit will be evident to any one who will consider how inconvenient it would be to a manufacturer or merchant, if instead of the yard for measuring cloth, either the inch or the mill had been made the unit of measure.

2. The most easy ratio of multiplication and division is that by ten. Every one knows the facility of decimal arithmetic. Every one remembers that when learning money arithmetic, he used to be puzzled with adding the farthings, taking out the fours and carrying them on; adding the pence, taking out the twelves and carrying them on; adding the shillings, taking out the twenties and carrying them on; but when he came to the pounds, when he had only tens to carry forward, it was easy & free from error.

The bulk of mankind are school-boys thro' life. These little perplexities are always great to them. And even mathematical heads feel the relief of an easier substituted for a more difficult process. Foreigners, too, who have trade or who travel among us will find a great facility in understanding our coins and accounts from this ratio of subdivision. Those who have had occasion to convert the livres, sols, and deniers of the French, the Guilders, Stivers and penings of the Dutch, the pounds, shillings, pence, and farthings of these several states into each other can judge how much they would have been aided had their several subdivisions been in a decimal ratio. Certainly in all cases where we are free to chuse between easy and difficult modes of operation, it is most rational to chuse the easy. The financier [Robert Morris] therefore in his report well proposes that our coins should be in decimal proportions to one another. If we adopt the dollar for our unit, we should strike four coins, one of gold, two of silver, and one of copper, viz:

1. A Golden piece equal in value to 10 dollars.
2. The unit or dollar itself, of silver.
3. The tenth of a dollar, of silver also.
4. The hundredth of a dollar of copper.

Omitting from our quotation Jefferson's arithmetical examples showing the extreme awkwardness of addition, subtraction, multiplication, and division in pounds, shillings, and pence, as compared with the ease and simplicity of like operations in dollars and cents, which he used to illustrate the force of his second point, we continue the quotation with his third point of importance to be considered in fixing the money unit.

3. The third condition required is that the unit, its multiples and subdivisions coincide in value with some of the known coin so nearly, that the people may by a quick reference in the mind estimate their value. If this be not attended to, they will be very long in adopting the innovation, if ever they adopt it. Let us examine in this point of view each of the four coins proposed.

1. The golden piece will be one fifth more than a half Joe and one fifteenth more than a double guinea. It will be readily estimated then by reference to either of them but more readily and accurately as equal to 10 dollars.

2. The unit or dollar is a known coin and the most familiar of all to the mind of the people. It is already adopted from South to North, has identified our currency and therefore happily offers itself as an Unit already introduced. Our public debt, our requisitions and our apportionments have given it actual and long possession of the place of Unit. The course of our commerce too will bring us more of this than of any other foreign coin, and therefore renders it worthy of attention. I know of no Unit which can be proposed in competition with the dollar, but the pound: But what is the pound? 1547 grains of fine silver in Georgia; 1289 grains in Virginia, Connecticut, Rhode Island, Massachusetts and New Hampshire; 1031.25 grains in Maryland, Delaware, Pennsylvania and New Jersey; 966.75 grains in North Carolina and New York.

Which of these shall we adopt? To which State give that pre-eminence of which all are so jealous? And on which impose the difficulties of a new estimate for their coin, their cattle and other commodities? Or shall we hang the pound sterling as a common badge about all their necks? This contains 1718.75 grains of pure silver. It is difficult to familiarize a new coin to a people. It is more difficult to familiarize them to a new coin with an old name. Happily the Dollar is familiar to them all, and is already as much referred to for a measure of value as their respective State pounds.

Following these remarks, Jefferson pointed out the similarity of his proposed coins representing a tenth and a hundredth part of a dollar respectively to various small coins already in use in the colonies, and suggested, although he did not definitely recommend, the coinage of a half-dollar, and a twenty-cent piece of silver, and a five-cent coin of copper. He criticized the minute unit of value proposed by Robert Morris — the 1440th part of a dollar — and then proceeded to consider the questions of the exact size of the dollar and other coins to be struck, the mint ratio between gold and silver, and the amount of alloy to be contained in the gold and silver coins. He accepted the principle of bimetallism without argument in his report, and favored a mint ratio approximately equal to the market ratio, saying that the proportion between the values of gold and silver is a mercantile problem altogether. Accepting tentatively a mint ratio of 15 to 1 as closely approximating the market ratio, he suggested a silver dollar of 365 grains of pure silver and that gold be coined into the ten-dollar pieces at the rate of approximately 24.3 grains of pure gold to the dollar. As to fineness of the coins he suggested eleven parts of gold or silver to one part alloy, the proportion used at the British mint. He favored this proportion because it represented one ounce of alloy to the pound, and facilitated calculations into which it entered.

It is apparent from these direct and indirect quotations, which con-

tain the gist of Jefferson's report on coinage, that his report represented an extremely intelligent and practicable point of view. Although Jefferson's report was later overshadowed by the better known report of Hamilton, the former antedated the latter by approximately nine years, and many of Jefferson's suggestions were not only accepted by Hamilton in his report, but enacted into law in the Coinage Act of 1792

3. HAMILTON'S REPORT ON THE ESTABLISHMENT OF A MINT: BIMETALLISM RECOMMENDED

To Alexander Hamilton, first Secretary of the Treasury, fell the task of presenting a report to Congress on the basis of which the Act of April 2, 1792, was passed, entitled *Establishing a Mint and Regulating the Coins of the United States*. In his characteristically excellent report, Hamilton analyzed the monetary conditions in the country in their relation to monetary systems of leading nations, and then on the basis of this comprehensive survey made various specific recommendations, of which the following are of particular interest at this point:

1. The unit of value should be the dollar, and there should be a silver dollar of 371.25 grains of pure silver and a gold dollar of 24.75 grains of pure gold.
2. The following pieces should be coined:
 - One gold piece equal in weight and value to ten dollars.
 - One gold piece of the value of one dollar.
 - One silver piece of the value of one dollar.
 - One silver piece of the value of one tenth of the dollar.
 - One copper piece of the value of a hundredth part of the dollar.
 - One copper piece half the value of the former.
3. The fineness of the gold and silver coins should be eleven twelfths, corresponding to the fineness of British coins.
4. No mint charge should be imposed upon coinage, the burden of the expense of the mint to be borne by the general public.
5. Foreign coins should be permitted to circulate for a limited time, but should be gradually suppressed.

It is apparent from the foregoing recommendations that they implied a bimetallic system with silver and gold both freely coined at the mint ratio of 15 to 1, the weight of silver in the silver dollar, 371.25 grains being just 15 times the weight of gold in the gold dollar, 24.75 grains.

In view of the fact that in the main his suggestions were adopted by Congress in the Coinage Act of 1792, it will be interesting to note in some detail some of Hamilton's more important reasons for his various recommendations.

He favored the dollar as the unit of value for the same reason advanced by Jefferson, namely, its degree of familiarity to the people.

He found that it was customary to reckon gold money at the rate of 24.75 grains to the dollar, by weight, and that the silver dollar, varying in weight from 368 grains to 374 grains of fine silver, was permitted to circulate by tale without much regard to either its exact weight or fineness. For these reasons he accepted 24.75 grains of gold as the proper weight of the gold dollar, and 371.25 grains, the mean between the maximum and minimum weights of the silver dollars in common circulation as the proper weight of the silver dollar. This ratio of 15 to 1 was further supported by the fact that it corresponded closely with the market ratio between silver and gold in the leading bullion markets of the world, the market ratio at the time having been a trifle under 15 to 1 in both London and Holland.

He considered the arguments for and against either a single gold standard or a single silver standard. As between these two single standards, both of which he rejected, he favored the gold standard, holding that gold might be expected to show in the future greater stability of value than silver, for the reason that it was less used as an article of merchandise and less likely to be influenced by fluctuations in commercial demand, and that the natural preference of mankind for the more valuable metal afforded an additional reason for choosing gold rather than silver as standard money.

4. WHY HAMILTON PREFERRED BIMETALLISM

Hamilton's reasons for preferring bimetallism to either a gold or a silver single standard can with advantage be given in his own words:

But upon the whole, it seems to be most advisable, as has been observed, not to attach the unit exclusively to either of the metals; because this cannot be done effectually, without destroying the offices and character of one of them as money, and reducing it to the situation of a mere merchandise; which, accordingly, at different times, has been proposed from different and very respectable quarters; but which would probably be a greater evil than occasional variations in the unit, from the fluctuations in the relative value of the metals; especially if care be taken to regulate the proportion between them, with an eye to their average commercial value.

To annul the use of either of the metals, as money, is to abridge the quantity of circulating medium; and is liable to all the objections which arise from a comparison of the benefits of a full, with the evils of a scanty, circulation.

Hamilton's conclusion that the exclusion of either gold or silver from free coinage would abridge the quantity of circulating medium was based primarily upon two considerations. First, the importation of the excluded metal would be discouraged and its exportation encouraged by the fact that it could not be used as money. A foreign buyer of Ameri-

can products might, for example, have silver available for payment, but not gold. If, then, silver were not acceptable as money in the United States, the buyer might seek some available substitute commodity, so that, instead of receiving a shipment of silver, the country would receive instead a cargo of some other commodity. Again, what silver did enter the country, if it could not be used as money, would soon be re-exported. The second consideration was that since gold is most convenient for large payments and silver for small payments, the total circulation of money in the country would be likely to be greater if both were retained as money than if one or the other were excluded.

It is, of course, probable that, if silver were excluded as money and importation of silver thereby discouraged and its exportation encouraged, this very state of affairs would encourage the importation and discourage the exportation of gold. It would, therefore, not be safe to conclude from the first consideration alone that bimetallism would tend to draw into the country and retain in circulation a larger stock of money than mono-metallism. But the second argument rests on more secure ground. There can be but little doubt that, if gold and silver combined are coined in denominations ranging from ten cents up to ten dollars, for example, the total amount of gold and silver combined retained in circulation will be greater than if either gold alone were used in the larger denominations or silver alone in the smaller denominations.

We must grant, then, that Hamilton was probably correct in concluding that to annul the use of either metal as money was to abridge the circulating medium. But granting this, we may raise two questions bearing upon this point: First, was it desirable to increase the amount of money in circulation if it could be done by this means? And, second, Was bimetallism the best method of retaining gold and silver coins in concurrent circulation?

5. WAS HAMILTON AN INFLATIONIST?

The fact that Hamilton advocated bimetallism, because it would tend to give the country the benefits of a full circulation as compared with the evils of a scanty circulation, would seem to stamp him as belonging to the school of naïve inflationists who believe that the more money a country has the better off it is, and to approve his policy would seem to be endorsing the principle of inflation as sound. But in considering this point it will be well to bear in mind the economic conditions of the new country in which Hamilton lived, briefly described in Chapter III — conditions tending constantly to drain the country of its stock of metallic money and to produce a scarcity of good currency. It should be re-

membered that, while the various kinds of poor money the colonists resorted to, the barter currency and the paper money, aggravated the monetary troubles by hastening the export of metallic money, the original scarcity of coin was not the result but the cause of the use of legal-tender commodities and the issue of paper money. Metallic money was naturally so scarce that, in the absence of cheap substitutes, trade was hampered for lack of currency and money exchange gave way to barter. Under these circumstances a good argument exists for applying a policy designed to put more good money into circulation. More money, if put into circulation in a country where money is so scarce that the additional money causes money exchange to take the place of barter, facilitates trade and promotes industry and the general welfare. The case is different, of course, when the country is already well supplied with a convenient medium of exchange; in that case the additional money does no more than to permit the existing trade to be carried on at higher prices and to promote perhaps an unhealthy speculation for the rise in prices. Obviously, the best method of getting more money into circulation in the country in Hamilton's time would have been to expand exports with relation to imports, but Hamilton was right in assuming that his principle of bimetallism might help, and he was probably right in assuming that more good money was needed.

6. THE PROBLEM OF CONCURRENT CIRCULATION OF GOLD AND SILVER

Although more good money in the form of gold and silver coins was needed to promote prosperity, bimetallism was not the system of coinage best adapted to provide the country with an ample supply of money. This fact soon became evident when the system was put into practice in 1792, because Gresham's Law tends to operate, under a bimetallic system applied in a limited area, in such a way as to drive one or the other of the two metals out of circulation as money. Bimetallism, except on the broad basis of a widespread international agreement upon the mint ratio, cannot be depended upon to keep gold and silver coins in concurrent circulation for the reasons that were fully developed in Chapter III. That Hamilton was quite aware of the possibility of the expulsion of either gold or silver by Gresham's Law is amply demonstrated by certain passages in his report in which he ably discusses this very possibility.

Although fully aware of the danger of alternate expulsion of gold and silver as a result of fluctuations in the market ratio above and below the mint ratio, Hamilton hoped to prevent such disturbances in large part by choosing a mint ratio approximating the market ratio. Moreover,

he believed that more was to be gained by opening the mints to both metals than would be lost by possible variations in the actual unit of value. The question may be raised, Why did it not occur to the astute mind of this clear thinker that all the advantages of the concurrent circulation of gold and silver coins could be gained without engaging in the hopeless struggle of maintaining parity between the mint ratio and the market ratio and without running the risk of having a fluctuating standard?

At this time England was already experimenting with the device of silver coins with a bullion content below their face value and with limited legal-tender power, which it finally accepted definitely in 1816 as a regular system of coinage. Simply by making gold the only metal freely coined and with unlimited legal-tender power, and by minting only on government account silver coins so light in weight that their silver content is less than their face value, and by restricting both the amount coined and their legal-tender power, it is possible to maintain in circulation and to create a monetary demand for both gold and silver — the monetary demand for silver in this case being determined, of course, by the quantity the Government buys for coinage. This is the method of maintaining both gold and silver in concurrent circulation that came into almost world-wide use during the nineteenth century, nearly all important nations following in time the example set by England in 1816.

Hamilton probably was not unaware of this possible method of maintaining concurrent circulation of gold and silver coins, but, if this plan occurred to him or was recommended to him, he doubtless dismissed it as a dangerous experiment. It must not be forgotten that if silver coins under the gold standard are to be kept in circulation by making their face value greater than the value of their bullion content the margin must be substantial to prevent sudden fluctuations in the market ratio between gold and silver from carrying their bullion value above their face value. In that case the silver coins would be collected for export or for sale in the bullion market and thus disappear from circulation, just as they would under bimetallism when the market ratio falls below the mint ratio.

But to mint coins on government account with a face value substantially in excess of bullion content is to run the danger of two highly undesirable consequences — the first is counterfeiting, and the second is inflation of the currency by the Government for reasons of political expediency. We have found by experience that the danger of counterfeiting is small when the coins are made by methods difficult for counter-

feiters to copy and when counterfeiting is severely punished. But in his time Hamilton had no assurance that this would be so. In respect to the danger of inflation of the currency through the coinage of unwarrantably large quantities of overvalued silver coins, we can say that Hamilton's fears were justified by our subsequent monetary history.

Hamilton's fears of the dangers involved in minting overvalued coins were so great, in fact, that he recommended that even the copper coins be made of such weights that the value of their bullion content plus the cost of coinage would approximately equal their face value. On this point we may resort again to direct quotation:

It may, perhaps, be thought expedient, according to general practice, to make the copper coinage an object of profit; but where this is done to any considerable extent, it is hardly possible to have effectual security against counterfeits. This consideration, concurring with the soundness of the principle of preserving the intrinsic value of the money of a country, seems to outweigh the consideration of profit.

Incidentally, it may be noted that Congress accepted Hamilton's recommendations of one-cent and half-cent coins containing their face value in copper. Consequently, there were coined these monstrously large coins of small value, the cent of pure copper weighing 264 grains, or six grains less than the first ten-dollar gold pieces, and the half-cent weighing 132 grains, or three grains less than the first five-dollar gold pieces. When it is borne in mind that one quickly accumulates in small-change transactions fifteen or twenty coppers, the minting of these huge pieces of small change is recognized as no less than a coinage atrocity of the first magnitude. Thus, we may observe that great statesmen may be guilty of errors in small affairs, but in this case Hamilton erred in a good cause — the cause of sound money and public welfare. It was not until 1864 that the size of the cent was reduced to manageable proportions, 48 grains, although some reduction in size had been made at earlier dates.

7. PROVISIONS OF THE COINAGE ACT OF 1792

Congress in the Coinage Act of 1792 in the main adopted Hamilton's recommendations, but in some important details did not follow his suggestions, particularly in respect to the denominations of the gold and silver coins to be struck. The act provided for the coinage of the ten-dollar, five-dollar, and two-and-one-half-dollar pieces, the three coins being named respectively the eagle, the half-eagle, and the quarter-eagle. The eagle was to contain 247.5 grains of pure gold and was to

be eleven twelfths fine, the twelfth part of alloy to consist of a mixture of silver and copper. The half-eagle was to weigh just half as much, and the quarter-eagle just one fourth as much as the eagle, and to be of the same degree of fineness.

The act provided for five silver coins — the dollar, the half-dollar, the quarter-dollar, the disme or dime, and the half-disme or half-dime. The silver dollar was to contain 371.25 grains of pure silver and an alloy of copper to the amount of 179 parts of copper to 1485 parts of silver. It should be noted in particular, in view of later developments, that the smaller silver coins were to be of the same degree of fineness as the dollar and to weigh exactly as much dollar for dollar.

The act provided also for the two copper coins suggested by Hamilton, the cent and the half-cent, of the great weight previously indicated.

On the essential points of the free coinage of both silver and gold at the mint ratio of 15 to 1, Congress was guided by Hamilton's recommendation. The importance of these provisions relating to bimetallism, both from the point of view of monetary theory and the subsequent history of silver coinage in the United States, makes it worth while to offer some direct quotations from the Act of 1792.

Section 11 reads as follows:

That the proportional value of gold to silver in all coins which shall by law be current as money within the United States, shall be as 15 to 1, according to quantity in weight, of pure gold or pure silver; that is to say, every 15 pounds weight of pure silver shall be equal in value in all payments with 1 pound weight of pure gold, and so in proportion as to any greater or less quantities of the respective metals.

Section 14 reads in part as follows:

That it shall be lawful for any person or persons to bring to the said mint gold and silver bullion, in order to their being coined; and that the bullion so brought shall be there assayed and coined as speedily as may be after the receipt thereof, and that free of expense to the person or persons by whom the same shall have been brought. As soon as the said bullion shall have been coined, the person or persons by whom the same shall have been delivered, shall, upon demand, receive in lieu thereof coins of the same species of bullion which shall have been so delivered, weight for weight, of the pure gold or pure silver therein contained; *Provided nevertheless*, That it shall be at the mutual option of the party or parties bringing such bullion, and of the director of the mint, to make an immediate exchange of coins for standard bullion, with a deduction of one half per cent from the weight of the pure gold, or pure silver contained in the said bullion, as an indemnification to the mint for the time which will necessarily be required for coining the said bullion, and for the advance which shall have been so made in coins.

Section 16 provided:

That all the gold and silver coins which have been struck at, and issued from the said mint, shall be a lawful tender in all payments whatsoever, those of full weight according to the respective values herein before declared, and those of less than full weight at values proportional to their respective weights.

The passages of the law just quoted provide clearly and unequivocally for free and unlimited coinage of both silver and gold at the mint ratio of 15 to 1, with full legal-tender power conferred upon both gold and silver coins. Coinage was to be not only free, but gratuitous, except for the fact that the mint would not bear the expense of interest on the metal during the time necessarily required for coinage.

The fact that Hamilton had specially recommended a gold dollar, and had given as his chief reason for desiring it, "to have a sensible [tangible] object in that metal, as well as in silver, to express the unit," and that Congress had not provided for such a coin, was later cited, when free coinage of silver had become a political issue, as evidence that Congress had intended to make silver, but not gold, standard money. This conception was that gold could not be standard money if there were no gold unit of value. Obviously, this represented a very superficial point of view, since 24.75 grains of gold constituted a dollar in the coinage system as adopted just as truly as if a one-dollar piece had been included in the list of coins struck. The significant point here was, of course, that free and unlimited coinage of gold was provided, and that gold coins were given full legal-tender power. These provisions made gold standard money and the gold dollar a unit of value, regardless of the existence or the non-existence of a one-dollar gold coin.

8. UNPRECEDENTED NATURE OF THE ACT OF 1792

In his *History of Coinage and Currency*, Hepburn states that the Coinage Act of 1792 represents the first attempt in the world to adopt by law a bimetallic standard with all the requisite features of free and unlimited coinage of both metals and with full legal-tender power conferred upon both. This is not to say that bimetallic systems of some sort had not previously been in operation in other countries. On the continent of Europe and in England the double standard had generally prevailed during the eighteenth century, and in some countries it had been operating in a fashion for hundreds of years, the stock of metallic money consisting of both silver and gold, silver being the more common money in circulation because the less valuable silver coins were more convenient than the more valuable gold coins for ordinary purposes of exchange. But these earlier bimetallic systems had not been deliberately

planned and systematically put into operation by a well-considered law, such as our Coinage Act of 1792. In so far as a bimetallic system was legalized in these early experiments with bimetallism, the process represented merely a halting adjustment of the operations of the mint to the monetary habits of the people. In England, for example, according to Jevons,¹ the double-standard monetary system developed as follows:

Out of a single legal tender naturally grew up systems of a double or even multiple legal tender. The Plantagenet kings of England, for instance, finding that though they coined only silver the people made use of gold, eventually began to issue gold coins, and fixed the rates at which they should be exchanged for silver coins. In the absence of any special regulations to the contrary, this constituted a double-tender system. As, after a time, the ratio of values to the metals would fail to coincide with that involved in the relative weights of the coins, it became requisite to fix by royal proclamation a new value for one metal in terms of the other. From 1257 to 1664 the gold and silver currency of England was thus regulated, no coins of copper or any inferior metal being then issued. From 1664 to 1717 no proclamations were made upon the subject, and the value of the guinea was allowed to vary in terms of the shilling. At one time it rose nearly to 30s., owing partly to the decreased value of silver, but chiefly to the clipped and worn state of the silver money. During this interval, then, the country had a single silver standard.

This quotation from Jevons, while describing in particular the monetary system of England, could doubtless be applied as a fairly accurate description of the monetary systems of other European countries during the same period, and it indicates the nature of the difficulty that our Government might have been expected to experience soon after putting into effect a double-standard monetary system with a fixed mint ratio of 15 to 1. In preceding pages of this book it has been made sufficiently clear that deductive reasoning leads inevitably to the conclusion that no one nation can, without some sort of international monetary agreements with other leading commercial countries, maintain a system of free coinage of both gold and silver, with full legal-tender powers, at a fixed mint ratio. In the natural course of events the fluctuating market ratio of the two metals will lead to the expulsion of the one or the other, leaving the country economically, if not legally, with a single standard of value. The actual standard money will be that one of the two metals which is worth relatively more at the government mint and in debt-paying power than it is worth in the metal markets of the world. The quotation from Jevons shows that the monetary history of England had justified this conclusion long before our mint was established. When the gold guinea

¹ From Jevons, *Money and the Mechanism of Exchange*, p. 98. By permission of D. Appleton-Century Company, publishers.

was worth thirty shillings in silver, silver became the true standard of value, and gold became mere bullion measured in terms of silver coins. When our new Government undertook to do what both deductive reasoning and monetary history strongly indicate is impossible, namely, to maintain bimetallism in practice in a narrow area, it was embarking on an experiment that could not really be expected to succeed, and no one, therefore, need have been surprised at its failure.

9. GOLD DRIVEN OUT OF CIRCULATION BY OVERVALUED SILVER

For a proper understanding of the operation of our monetary system during its first half-century, it is necessary to bear in mind that foreign coins of various kinds remained in circulation long after our mint was established, and that in view of the limited amount of domestic coins made available by the new mint, Congress made various foreign minted coins legal tender at certain ratings in terms of United States coins. At first these foreign coins were given legal-tender power only for a few years, but from time to time the period in which they might be considered legal tender was extended. Not only did various foreign coins have legal-tender power but they were freely acceptable in exchange by the people as a matter of custom, their use, as already stated, antedating the establishment of our mint. There were, then, three kinds of money with legal-tender powers readily acceptable in exchange by practically all to whom payments were due — United States gold coins, United States silver coins, and foreign coins, particularly the Spanish dollar.

But United States gold coins did not remain in circulation in any considerable quantity until the mint ratio was changed by the laws of 1834 and 1837, from 15 to 1 to approximately 16 to 1. The market ratio between silver and gold was slightly above 15 to 1 in 1792, having risen somewhat after Hamilton made his estimates in his report on the mint, and shortly thereafter moved definitely higher. For the greater part of the period between 1792 and 1834, during which the mint ratio was fixed at 15 to 1, the market ratio was above rather than below 15.5 to 1, and in some years rose even above 16 to 1. During this time, then, gold was clearly undervalued at the mint.

Moreover, the French Coinage Law of 1803 provided for the free coinage of silver and gold at the mint ratio of 15.5 to 1, so that gold was undervalued at the American mint not only with relation to the market ratio, but also to the French mint ratio, and by a substantial amount. Under these circumstances deductive reasoning would indicate that no gold would be presented at the American mint for coinage, but that all Americans who came into possession of gold would exchange it for silver

at the market, whence it would drift into use in the arts or be exported to France or other countries with a mint ratio above 15 to 1.

Substantially, but not exactly, the conclusions of deductive reasoning squared with the facts. Some gold, but not a great deal, was actually coined. In the earlier part of the 1792 to 1834 period, more gold than silver was coined at the American mint in some years. During each of the years 1800 to 1804, for instance, considerably more gold than silver was coined. After 1805, however, the quantity of silver coined with relation to that of gold distinctly increased. Except for the year 1820, when an abnormally large amount of gold was coined as the result of a special operation by the Second Bank of the United States, more silver than gold was coined each year from 1806 to 1834, despite the fact that, for reasons to be given shortly, no silver dollars, but only subsidiary silver coins, were struck during this period. Of the several millions of dollars of gold coined during this period, little seems to have found its way into circulation. Hepburn¹ notes that, of the gold coinage amounting to \$6,000,000 by 1821, practically none remained in use as money, and Laughlin states that careful inquiry reveals that gold coins were seldom seen during the larger part of the period from 1792 to 1834, and that gold had disappeared from circulation and the country had practically the silver standard as early as 1817.² The gold coins minted were presumably used in the arts, or exported, but statistics on exports of gold for this period are not available. The process of coinage represented for the gold-owners merely a convenient and inexpensive method of getting their gold assayed, refined, and stamped by responsible authorities.

10. THE BATTLE OF THE LIGHT-WEIGHT AND HEAVY-WEIGHT SILVER COINS

Among the silver coins a three-cornered battle for supremacy in circulation developed, the three factions in the contest being the newly coined American silver dollars, half-dollars, quarters, and dimes; the Spanish full-weight dollars; and the old light-weight Spanish and other foreign coins. The Spanish milled dollar, when new and of full weight, was slightly heavier than our own new silver dollars, and among dealers in bullion and at the banks commanded a premium of one quarter to one half of one per cent over the American dollar. This difference, taken by itself, unattended by other complicating factors, would have

¹ From Hepburn, *History of Coinage and Currency in the United States*, p. 30. By permission of The Macmillan Company, publishers.

² Laughlin, *History of Bimetallism in the United States*, p. 30. D. Appleton-Century Company, publishers.

caused the Spanish dollar to be hoarded, melted down and sold as bullion, recoinced into American dollars, or exported; and in any event would have left the United States silver dollar in control of the field of circulation. But just as the new American coins would have tended to drive out of circulation the full-weight Spanish dollars, so the old light-weight foreign coins would have tended to force out of circulation the new American coins, if, in fact, any of these were coined under conditions that made them undervalued from the start. But a third circumstance operated to change the outcome in some respects. It happened that in the West Indies, in which American merchants were active, American dollars were accepted by tale interchangeably with the Spanish dollars, and this made it possible for traders to profit by exporting newly coined American dollars and importing full-weight Spanish or Mexican dollars. The latter, when imported, could be presented at the mint for recoinage into a larger number of American dollars, which in turn could be exported and traded for more Spanish dollars, and so on round after round. Thus, American silver dollars continued to be coined in large numbers, but they were drained out of the country as rapidly as coined. When it became obvious that the mint was in this way being used at public expense for private benefit, President Jefferson directed the mint to suspend the coinage of the silver dollar. But a profit could still be made in the same way by the exportation of the half-dollar, and the West Indian trade in money was continued to the detriment of our monetary system. While a large proportion of the American silver coins minted were thus drained out of the country, and while foreign light-weight coins represented an important part of our circulating currency, a substantial amount of our own silver coins did remain in circulation, presumably because the light-weight foreign coins were not sufficiently abundant to satisfy the requirements for small change.

During the War of 1812-15 the exigencies of war finance brought such disorders into the currency that in 1814 the banks generally suspended specie payment, and thus the struggle for supremacy among the gold and silver domestic coins and the foreign coins was complicated by the entry of the disreputable competitor, inconvertible paper money, discussion of which must be postponed to a later chapter. Despite all the complications, however, two things seemed clear: first, the less valuable money tended to drive the more valuable money out of circulation when both were legal tender, and second, bimetallism, representing an attempt to keep both the less valuable and the more valuable money concurrently in circulation with full legal-tender powers was not a success.

11. THE MINT RATIO REVISED FROM 15 TO 1 TO 16 TO 1

The fact that the country had found itself with a single silver standard actually in use, instead of a double standard of gold and silver, led to a revision of the mint ratio by the laws of 1834 and 1837, the first important coinage legislation since 1792. The Coinage Act of 1834 was passed only after prolonged consideration both in and out of Congress. Three divergent points of view were presented in the debates on the subject of the best solution of the coinage problem.¹ One point of view favored the retention of bimetallism with a new mint ratio calculated to maintain both metals in concurrent circulation — that is to say, a repetition of the unsuccessful effort of 1792. The second point of view favored the definite legal adoption of the single silver standard, a plan that was supported by two good arguments, namely, that the country was already practically on the silver standard and that the country could get along better without gold coins than without silver coins, provided it would establish a sound bank-note currency to supply money required in large denominations. The third point of view favored the establishment — in fact, if not in legal theory — of the single gold standard. The chief protagonist of the gold standard was Senator Benton, who seems to have been influenced by a desire to retain in circulation the gold produced at the recently discovered and promising gold mines in North Carolina and neighboring states. Retention of this gold in circulation was to be made a certainty, not by openly adopting the single gold standard, but by retaining bimetallism in theory, with a mint ratio so far overvaluing gold as to make it the favored metal at the mint beyond a doubt. The mint ratio of 16 to 1, the ratio long in effect in Spain, Mexico, and South America, was calculated to achieve this purpose.

The third point of view prevailed. Bimetallism was officially retained, but with a mint ratio of 16.002 to 1, a ratio substantially above the market ratio, which was, in 1834, 15.73 to 1. The change in the mint ratio was effected by leaving the silver dollar to consist of 371.25 grains of fine silver, as before, and by reducing the weight of fine gold in the gold dollar to 23.2 grains. By the Coinage Act of 1837 some slight changes were made in the gold and silver coins, the gold content of the gold dollar being increased to 23.22 grains, and the fineness of both the gold and the silver coins being fixed at .900. This act gave us, then, a standard gold dollar weighing 25.8 grains and containing 23.22

¹ More detailed discussion of the divergent points of view may be found in Hepburn, *History of Coinage and Currency in the United States*, ch. 3, and Laughlin, *History of Bimetallism in the United States*, ch. 4.

grains of fine gold, and a standard silver dollar weighing 412.5 grains and containing 371.25 grains of fine silver. This represents a mint ratio of 15.988 to 1, or practically 16 to 1.

It has been charged that the Coinage Act of 1834 represented a debasement or devaluation of the currency, since, while it did leave the weight of the silver coins unchanged, it reduced the weight of the gold dollar, which thereafter became the true standard of value, from 24.75 grains of fine gold to 23.2 grains, a reduction of 6.26 per cent. But it should be noted that, while the gold dollar was thus reduced 6.26 per cent in weight and therefore in value, there was not actually an equal debasement in the currency. The real debasement in the currency, if it may be so called, was the difference between the new actual standard of value, the gold dollar, and the old actual standard of value, the silver dollar. Before the change in the mint ratio, except in the case of special contracts to the contrary, debtors could pay in either gold or silver dollars, whichever they chose — and they chose, of course, the cheaper silver dollar of 371.25 grains. After the change in the mint ratio, they again chose to pay in terms of the cheaper dollar, and this now was the gold dollar of 23.2 grains, which at the market ratio of 15.8 to 1 was worth as much as 366.56 grains of silver. Since 366.56 grains is only 1.26 per cent less than 371.25 grains, the actual reduction in the value of the standard of value was only 1.26 per cent and not as might at first appear, 6.26 per cent. It does not appear, therefore, that any tremendous injustice was done to creditors or any great boon conferred upon debtors by this depreciation in the currency, the actual depreciation having been less than one fourth of a year's interest on the average loan. It would probably be difficult to select a twelve-month period during which greater changes in the value of the gold dollar did not occur, as measured by fluctuations in the general level of prices. Of course, in the cases of sums specifically pledged as payable in gold dollars, the depreciation represented by the "debasement" of the gold dollar was substantial.

12. THE EXPULSION OF SILVER

The most significant immediate effect of the change in the mint ratio from 15 to 1 to 16 to 1 was a sharp increase in the quantity of gold coined in our mints. Contrary to statements sometimes made, and contrary also to what reasoning in respect to the overvalued and the undervalued metals might lead one to expect, there was no immediate decline in the amount of silver coined. In fact, in the three calendar years 1834 to 1836, more silver was coined than in any three earlier years in the history of the mint, and in the year 1836 more silver was

coined than in any earlier year. During the next few years there was a tendency for the quantity of silver coined to decrease somewhat, but in the fifteen years from 1836 to 1850 inclusive more than \$33,000,000 in silver was coined as against approximately \$32,000,000 in the preceding fifteen years.

With these figures before us it is manifest that we cannot say that when the mint ratio was raised to 16 to 1, or substantially above the market ratio, and silver thus definitely undervalued at the mint, silver was no longer taken to the mint, and only gold was coined. Bearing in mind Gresham's Law in its relation to bimetallism and the undervalued metal, we should look for evidence of the exportation of the silver coined, but what statistics of silver exports and imports we have indicate that almost as much silver was imported as exported. These statistics are, however, not complete, and therefore not conclusive: What actually seems to have happened was this: the new full-weight coins struck at our mint were in large measure exported, being sent to France — where the mint ratio, 15.5 to 1, was not only below our mint ratio, but also below the world market ratio — and to other European countries and to India. At the same time silver coins from South and Central America and Mexico were imported, and such of these as were light in weight remained in circulation to serve as small change. So long as silver coins, of whatever mintage, contained silver bullion worth appreciably more than their face value, a profit could be made by gathering them up and exchanging them as bullion for gold, or exporting them, and sometimes this profit was substantial. In this case, as always, the poor money — the light-weight coins — tended to drive the good money — the new full-weight coins — out of circulation. Gresham's Law was still in force. Bankers, exporters, dealers in coins were its agents, working in their own interest, and not subject to bribes.

While the amount of silver coined increased only from \$32,000,000 during the fifteen-year period, 1821 to 1835, to \$33,000,000 during the next fifteen years, the amount of gold coined increased in much greater proportion, from \$10,000,000 in the first period to \$99,000,000 during the second fifteen years. More than two thirds of this \$99,000,000 was coined, however, during the five years, 1846 to 1850, the sudden increase in coinage having been the result of new gold discoveries. With the discovery of gold in California, Australia, and Russia, the world production of gold enormously increased, from an annual average of approximately \$36,400,000 during the ten years 1841 to 1850, to about \$133,000,000 during the next ten years. Of this increase California contributed a large share, and much of the Californian gold naturally

flowed into the American mints for coinage. Meanwhile, the mines of North Carolina, which had seemed promising in the thirties, had proved to be comparatively unproductive, and it was Western and not Southern gold that enriched our currency under the new mint ratio of 16 to 1.

As a result of the relatively great increase in gold production and the total world stock of gold, while the production of silver increased but slightly, the market ratio of silver to gold fell from 15.85 to 1 in 1848, to 15.33 to 1 in 1853. This increased the market premium on full-weight silver coins and made it profitable to melt down and export even light-weight coins such as had previously remained in circulation. Consequently, the country was practically denuded of silver coins. In 1851, and again in 1852, the total amount of silver coined in the United States fell below \$1,000,000, after having exceeded that figure each year from 1824 to 1850. The extreme scarcity of small change and the poor quality of such silver coins as remained in circulation — light-weight coins 10 per cent to 20 per cent below their nominal value — rendered imperative a revision of our Coinage Law, a revision which was made in 1853.

13. THE COINAGE ACT OF 1853

In 1853, the mint ratio having for years been above the market ratio, and the overvalued gold having, as indicated, driven the undervalued silver money almost completely out of circulation, the country was practically and economically, though not yet legally, on the single gold standard. Silver would not be used as a standard of value and legal tender while gold was the cheaper debt extinguisher, and silver was not available for use as a medium of exchange. Since it seems to be a historical fact that people in general have had a preference for gold money, the country might well have been satisfied with the situation and refrained from meddling with the coinage laws, except for the uncomfortable fact that gold cannot serve conveniently in small-change transactions. Despite the abundance of gold money, there was no satisfactory metallic money available for such humdrum but none the less necessary financial operations as paying for a pound of butter or a peck of potatoes. A change in the mint ratio from 16 to 1 back to 15 to 1 would have resulted in the expulsion of gold and the re-establishment of silver as the actual standard money, a consummation not generally desired. An attempt to make the mint ratio equal to the market ratio, and thus to maintain the concurrent circulation of both metals, would have led to uncertain results owing to the fluctuations

in the market ratio, and this solution of the problem made no strong appeal because it was in fact no real solution.

The course which was taken was effective in maintaining the concurrent circulation of both gold and silver coins, but it resulted in the virtual demonetization of silver, or, more accurately, it resulted in the displacement of silver from use as standard money and its relegation to use as subsidiary coinage, without either being subject to free and unlimited coinage or having full legal-tender power.

What was actually done was this: the amount of pure silver in the fractional silver coins, the half-dollar, the quarter, the dime, and the half-dime, was reduced from 371.25 grains to 345.6 grains to the dollar, a reduction in weight of 6.91 per cent. Bullion for the coinage of these coins was thereafter to be purchased at the market price by the Director of the Mint, and no longer to be received from other persons for free coinage. In other words, coinage of subsidiary silver was to be only on government account. The profit, or seigniorage, from this coinage — that is to say, the difference between the face value of the coins and the expense of buying the bullion, coining, and distributing the coins — was to be transferred to the Treasury of the United States. In order to restrict the use of these light-weight coins to small-change transactions for which they were intended, they were made legal tender only for sums not exceeding \$5, this maximum later being increased to \$10.

The status of the silver dollar, unlike that of the other silver coins, was left unchanged by the Act of 1853. It remained a coin subject to free coinage at the old mint ratio of 16 to 1, and with full legal-tender powers.

14. RESULTS OF THE COINAGE ACT OF 1853

Observe now the results attained by the Coinage Act of 1853. The silver dollar still containing 371.25 grains of fine silver, worth more in the metal market than at the mint, remained out of circulation after 1853, as it had been out of circulation before. With a mint ratio of 16 to 1, it could be expected to remain out of circulation, and did in fact remain out, so long as the market ratio remained below 16 to 1, which was until the year 1874. During the whole period from 1853 to 1874, no one gave much thought to this coin except perhaps with a view to collecting stray specimens as curios, or to sell them at a profit for use as bullion in the arts, or to be exported.

As for the subsidiary silver coins, the Director of the Mint at once proceeded to buy silver bullion in large quantities to be coined into half-dollars, quarters, dimes, and half-dimes, to supply the country with its much-needed small change. More than \$9,000,000 of subsidiary silver

was coined in 1853, and in round numbers, \$40,000,000 during the six-year period, 1853 to 1858. During this same six-year period, it may be noted incidentally, fewer than 263,000 silver dollars were coined, and these were coined, presumably, not to be put into circulation by their owners, but merely as a convenient means of getting the silver assayed and stamped as a preliminary to sale in the metal market or for export.

At 345.6 grains of fine silver to the dollar, the mint ratio of the subsidiary silver to gold was a little under 15 to 1, and the coins as such were worth approximately \$1.39 per ounce of fine silver content. By the Coinage Act of 1873 the weight of the subsidiary silver coins was increased slightly to 385.8 grains of standard silver, or 347.22 grains of fine silver to the dollar. Coinage value of silver was thereafter \$1.38 per fine ounce. With gold as standard money the subsidiary silver coins would, therefore, tend to remain in circulation so long as the market ratio did not fall below 15 to 1, or so long, in other words, as the market price of silver in terms of gold money did not rise above \$1.38 an ounce. At no time since 1853 has the market price of silver in terms of gold risen above \$1.38 an ounce, except for a time in 1919, when it rose to a maximum of \$1.3875, and little or none of our subsidiary silver money has been driven from circulation as a result of its bullion content having risen in value above the face value of the coins, in gold. During the period from 1862 to 1879, however, the country's standard money was the inconvertible paper money called greenbacks. The greenbacks depreciated in value in terms of both gold and silver money, and drove silver coins of all denominations, as well as gold coins, out of circulation. With the resumption of specie payments in 1879, and even before, as the greenbacks appreciated in value in terms of gold, the silver coins again became worth less as bullion than as money, and have remained in circulation continuously since that time.

Not only have the subsidiary coins remained in circulation along with gold coins ever since the Act of 1853, with the exception noted of the greenback period, but they have never depreciated in value as money in terms of gold money as some critics of the law "debasing" these coins contended that they would. The critics held that, since the coins did not contain their full face value in bullion, they would not be accepted in trade at their face value, but only at their bullion value, which would fluctuate with the market price of silver. If the Government had coined enormous quantities of the subsidiary silver and had thus filled the channels of trade to overflowing, and had then refused to redeem the superfluous coins in gold when they accumulated in the banks and were presented by the banks to the Government, they

would doubtless have depreciated in value to the value of their bullion content. But the Government turned them out in moderation, coining enough to meet the needs of the people for small change, and not enough to cause large amounts to accumulate in the banks, or to be presented to the Government for redemption. Thus, these coins remained as good as gold because they remained in effect exchangeable for gold. The result would have been the same if they had been made of copper or other base metal. Their value as money depended, in short, not upon their bullion content, but upon their limited quantity and ready convertibility into gold. The general rule in respect to token coins of all sorts, if the Government desires to avoid overissue and depreciation in terms of standard money, is this: let the mints remain inactive until the banks complain of a shortage of small change, which they will do when the requirements of trade cause people to draw out of the banks more small change than they pay in, and then proceed to coin in moderation and to place in circulation the token coins until the complaints of shortage cease.

So far as it went, the Coinage Act of 1853 was the best-considered of all our coinage acts up to that date, because it was the first of our coinage laws to solve the problem of providing the country with a satisfactory coinage system, consisting of both gold and silver coins uniform in character and in concurrent circulation. England, it may be recalled, had correctly solved this problem thirty-seven years earlier, in 1816. Had the law of 1853 gone one step farther and either removed the silver dollar from the list of coins to be struck or provided for its coinage under the same conditions as the smaller silver coins, the relegation of silver to a purely subsidiary non-standard money would have been completed, and completed at a time when no serious objections would probably have been raised against it. Moreover, if this "demonetization" had been completed in 1853 in a general revision of the coinage system, it is possible that the controversy over silver which developed in the seventies and raged to the end of the century might have been avoided.

15. THE "CRIME OF '73"

Unfortunately, however, the silver dollar remained in the list of coins to be struck, and was still legally subject to free coinage at the mint ratio of 16 to 1. It was still a standard of value legally equivalent to the gold dollar, with full legal-tender power. In short, bimetallism had been retained, only the subsidiary silver coins being barred from free coinage and limited in legal-tender power; and so things remained

until, in a revision of the coinage laws in 1873, the silver dollar was dropped from the list of coins to be struck. This revision of the coinage laws was deliberate in character and was under consideration from 1870 to 1873. Hepburn states that the bill was before Congress three years, was printed at least ten times, was debated on several occasions, and that attention was directed to the omission of the silver dollar.¹ There seems to have been nothing surreptitious about the process of dropping the silver dollar, and thereby definitely doing away with the free coinage of silver at the mint ratio of 16 to 1 by eliminating from coinage the only silver coin subject to free coinage after the Act of 1853.

Within a few years, however, members of Congress who had voted for the bill eliminating the silver dollar, and who had presumably studied carefully and understood the purport of its provisions, raised a great cry that the free coinage of silver had been terminated by an outrageous conspiracy. The conspirators were accused of having stealthily and under cover of night, as it were, purloined the "dollar of our daddies" and thereby imposed unbearable hardship upon the common people of the country by depriving them of the means whereby they might honestly pay their debts. The conspirators were presumed to have been acting in the interest of the wealthy bankers of Wall Street, who were reputed to be intent upon using the gold standard as an engine of oppression. As a result of the hue and cry thus raised, the Coinage Act of 1873 was destined to go down in history as the "Crime of '73." The significance of this "crime," the arguments of the prosecution and the defense, and the verdict of the jury, the American voters, delivered in installments in a series of election campaigns, will be the subject of the following chapter.

¹ From Hepburn, *History of Coinage and Currency in the United States*, p. 279. By permission of The Macmillan Company, publishers.

CHAPTER VII

BIMETALLISM ABANDONED

1. ENGLAND ADOPTS THE SINGLE GOLD STANDARD, 1816

WITH the growing importance of international trade during the nineteenth century, it became increasingly clear to the large number of nations that had been dabbling with bimetallism on a narrowly restricted nationalistic basis that, on such a basis and in the absence of an international agreement on a mint ratio, the double monetary standard was unworkable. Invariably the metal overvalued at the mint tended to drive out of circulation the undervalued metal. Gresham's Law was found to be tireless, immutable, ubiquitous, and supreme, overriding the petty laws of politicians and statesmen who presumed to ignore or defy it. A widespread international agreement on the establishment of bimetallism on an international basis was found impossible to achieve, and the leading nations of the world during that century abandoned bimetallism and adopted instead the single gold standard, England taking the lead in this movement.

Although England had previously restricted the free coinage and legal-tender power of silver, the country was not placed definitely upon the gold standard until the passage of the Coinage Act of 1816. By this act the free coinage of silver was indefinitely suspended, and the silver coins were deprived of full legal-tender power. Silver coins might, however, continue to be coined at the discretion of the Government, on government account at the rate of 66 shillings to the pound of standard silver. This represented a reduction in the weight of the silver coins of about 6 per cent, and a mint ratio of silver to gold of approximately 14.2 to 1. With this law England had solved the problem of maintaining both gold and silver coins in concurrent circulation safely protected from the operation of Gresham's Law. By suspending the free coinage of silver and depriving it of full legal-tender power and by restricting the amount of silver coined on government account to the requirements of small-change transactions, it was made impossible for gold to be driven out of circulation by silver. On the other hand, gold could not drive silver out of circulation, since the silver coins were worth more as money — because made light in weight — than in the bullion market.

This solution of the problem was as simple as it was effective, and it

is remarkable that other nations did not sooner follow the example of the leader in this desirable monetary reform. At no time since 1816 has the market ratio of silver to gold fallen below 14.2 to 1, and at no time, therefore, have the silver coins been threatened with expulsion by "cheaper" gold money. But in 1919 and 1920, when the price of silver in terms of gold rose abnormally high at the same time that the standard pound sterling represented not gold but depreciated paper money, the market price of silver in paper shillings rose above the mint price of 66 shillings to the pound and the bullion value of the silver coins rose above their face value. To prevent the expulsion of the silver coins from circulation under these conditions, the Government decided upon recoinage, reducing the fineness of the coins from .925 to .500, thereby reducing their pure silver content by almost half, and incidentally realizing a handsome profit for the Treasury.

It may be observed that the provisions of the English Coinage Act of 1816 were quite similar to those of our own Subsidiary Coinage Act of 1853, passed likewise with the object of restoring gold and silver coins to concurrent circulation. But there was this significant difference: under our Subsidiary Coinage Act the silver dollar remained subject to free coinage at the mint ratio of 16 to 1, and while this was a matter of no immediate importance so long as the market ratio remained, as it then was, substantially below the mint ratio, it was a potential source of trouble because the country still remained legally on a bimetallic basis, and would revert to a silver standard whenever the market price of silver fell sufficiently to raise the market ratio above 16 to 1.

2. THE FRENCH EXPERIMENT WITH BIMETALLISM, 1803-1873¹

In 1803, only thirteen years before England definitely abandoned the double standard, France, which had previously experimented with bimetalism in various forms, adopted bimetalism with a mint ratio of 15.5 to 1, the market ratio at the time being approximately 15.41 to 1. Conditions more favorable for the success of a nationalistic experiment in bimetalism could hardly be imagined. France had adopted a mint ratio very close to the market ratio, and for many years no great disturbance to the market ratio of gold to silver occurred. Moreover, France was one of the leading commercial countries in the world, and her monetary system, during part of the period of this bimetallic experiment, was closely tied together with the systems of Belgium,

¹ Much of the factual material in Sections 2, 3, and 4 of this chapter is from Laughlin, *History of Bimetallism in the United States*, Chs 10-11. By permission of D. Appleton-Century Company, publishers.

Switzerland, and Italy. The compensatory action, upon which the success of a bimetallic system depends, might, therefore, in this case have been expected to operate pretty effectively, a considerable portion of the world's industry and trade lying within this bimetallic zone, and the factors acting to disturb the market ratio not being particularly potent.

According to the theoretical point of view, whenever the market ratio rose above the mint ratio in France, silver should have poured into the French mint for coinage and have passed into active circulation, while gold should have been expelled from circulation for use in the arts or for export; and whenever the market ratio fell below the mint ratio, the movement of the two metals should have been reversed. But the compensatory action should have tended at all times to bring the market ratio back to the mint ratio when the two had diverged, the overvalued metal being drawn from the market into the mint, and the undervalued metal being driven from circulation into the market, thus relatively decreasing the market supply of one and increasing the supply of the other. If, however, the area over which the bimetallic system operated represented too small a portion of the whole field of industry and trade, and if the disturbing factors were too potent, the compensatory action would be ineffective. On the whole, purely deductive reasoning would have indicated that the success of the French system of bimetallism was extremely doubtful — the area in which it operated being too limited in relation to the world at large. Note now the outstanding facts of the French experience.

In France, no more than in the United States, was it true that, when the market ratio rose above the mint ratio, only silver and no gold was presented for coinage, and when the market ratio fell below the mint ratio, only gold and no silver was presented. On the contrary, substantial quantities of both gold and silver were coined in every year, with a few exceptions, from 1804 to 1873, during which period the market ratio was sometimes above and sometimes below the mint ratio. But in most years when the market ratio was above the mint ratio more silver than gold was coined, and when the market ratio was below the mint ratio, more gold than silver was coined. From 1821 to 1850, for example, the market ratio remained persistently above the mint ratio, and in each year during that period, the silver coinage exceeded the gold coinage with monotonous regularity. But from 1853 to 1866, when the market ratio was below the mint ratio, more gold than silver was coined each year by a wide margin. During the years 1867 to 1869, however, more gold than silver continued to be coined, although the market ratio had risen slightly above the mint ratio.

During this period France was growing rapidly in wealth and her industries were being transformed by the Industrial Revolution, involving more widespread application of the division of labor, so that the country could readily absorb large quantities of additional metallic money, both silver and gold. But when gold was undervalued at the mint from 1821 to 1850, it tended to flow out of the country, while silver flowed in. Consequently, by 1850 the greater part of the French stock of gold money had disappeared and the main part of the circulation was silver. But after 1850, when the large quantities of new gold from California and Australia caused a decline in the value of gold and reduced the market ratio below the French mint ratio, gold became the overvalued and silver the undervalued metal, and the international flow of the metals was reversed.

According to Laughlin, during the years from 1852 to 1864 France imported directly about \$680,000,000 in gold, and exported about \$345,000,000 in silver. Since these figures both for gold and silver represent more than two fifths of the total world production of the metals during this period, it appears that the compensatory action must have been operating with a considerable degree of potency. The figures indicate that the world outside of France was obtaining gold to the amount of less than 60 per cent of annual production, while it was obtaining silver to the amount of more than 140 per cent of annual production; or, in other words, that the compensatory action arising from the French mint ratio might be presumed to have the same effect on the world market ratio between gold and silver as would have been produced by world silver production increasing 40 per cent while gold production declined 40 per cent. Undoubtedly this absorption of gold and expulsion of silver by France on a large scale prevented not only a sharper fall in the market ratio of silver to gold, but also a considerable decline in the value of gold in terms of commodities in general. The world level of prices was presumably to some extent stabilized by the French bimetallic system. Nevertheless, it still remains true that this national experiment in bimetallism must be classed as a failure. Despite the potency with which the compensatory action operated, it was not powerful enough to maintain the market ratio on a par with the French mint ratio, and to prevent first the practical expulsion of gold, then, when the tide turned, a dangerous expulsion of silver, and finally, as we shall see, the probable complete expulsion of gold, if the coinage system had not been changed in 1873.

3. THE LATIN UNION

When, before 1850, France had lost most of her gold from circulation, she took no action toward abandoning bimetallism, since, as already noted, a country can carry on fairly well without gold coin provided it has silver in abundance for small transactions and bank notes for large transactions; and France had both. But when, after 1850, the silver coins, both the large five-franc piece, corresponding to our silver dollar, and the smaller coins used in retail transactions, began to grow scarce, the country soon felt the need of revising its coinage laws.

The change that was made was agreed upon in a conference in Paris, in 1865, of delegates from four countries, namely, Belgium, Switzerland, Italy, and France. These countries all used the franc as a unit of value, and all had a common interest in taking measures to prevent the loss of their small silver coins from circulation as a consequence of the fall in the market ratio of silver to gold.

At the conference in Paris the four countries named above formed the Latin Union, the chief purpose of which was to maintain a uniform coinage system based upon the French franc. To save the small silver coins from expulsion, the countries agreed upon a plan of lowering their silver content by fixing their fineness at .835, which represented a mint ratio of about 14.4 to 1, a ratio considerably below the market ratio, which was at this time approximately 15.44 to 1. In order to keep these light-weight silver coins from driving the more valuable gold money out of circulation, it was necessary to restrict the quantity coined and their legal-tender power. The countries agreed, therefore, to limit the legal-tender power of the small silver to fifty francs, and to limit the quantity outstanding to six francs per capita, a very moderate amount. The states which issued the coins agreed to receive them from their own citizens in any amount, and this was practically equivalent to redeeming them in standard money. Thus, ample provision was made to keep the subsidiary silver money from depreciating and driving the gold and full-weight silver five-franc piece from circulation.

This action of the Latin Union was in essential respects quite similar to the action taken by the United States twelve years earlier, under the Subsidiary Coinage Act of 1853. The free coinage of the small silver coins was suspended in each case, and their legal-tender power was limited, while the largest silver coin, the dollar in the one case and the five-franc piece in the other, remained subject to free coinage with full legal-tender power. The fact that our mint ratio was 16 to 1 while the French mint ratio was 15.5 to 1 had compelled our Government to take action sooner to save its small silver when the market ratio of silver to

gold began to fall after the gold discoveries of around 1850. This difference in the mint ratios also affected in an important way subsequent legislative action.

Only two years after the conference in Paris and the formation of the Latin Union in 1865, the market ratio of silver to gold rose definitely above 15.5 to 1, as a consequence primarily of a considerable increase in the annual production of silver. Silver, as a result, was offered in increasing quantities at the French and Belgian mints to be coined into the five-franc pieces, which, it should be remembered, were still subject to free coinage at the old mint ratio of 15.5 to 1, and these silver coins threatened to drive out gold. Since both the French and the Belgians preferred gold as standard money to silver, both countries in 1873 limited the amount of silver five-franc pieces that could be coined, and in 1874 the Latin Union took similar action, the number of five-franc pieces to be coined being apportioned among the countries included in the Union. After some temporizing, in the expectation that the value of silver might rise again, the Latin Union in 1878 finally adopted the policy of complete suspension of free coinage of silver in any form, and thus brought an end to bimetallism over an important area of the world which had been strongly inclined to retain it.

4. THE END OF BIMETALLISM IN EUROPE

Germany, influenced by the action of England in 1816 and that of the United States in 1853, by two laws of 1871 and 1873 took decisive action to turn from the silver to the gold standard. Under the new coinage system gold coins were struck from the gold received from France as war indemnity, or bought in the world market, at a mint ratio of 15.5 between the old silver coins and the new gold coins. The old silver coins were gradually called in and recoinced into coins of lighter weight. Free coinage of these coins was suspended, and their legal-tender power and the quantity to be issued were limited. Incidentally, with the great quantity of new gold money coined from the French indemnity gold available, Germany did not require as much silver coinage as before, and in the years immediately following 1873 threw large quantities of silver bullion on the market, thereby contributing to the decline in the market value of silver then taking place and influencing the subsequent monetary history of the United States and other countries.

Norway, Sweden, and Denmark adopted the gold standard in 1872, and Holland suspended the free coinage of silver the next year. In 1879, Austria, which had formerly had a silver standard and was at the time struggling with a depreciated paper standard, closed her mints to silver

and emerged as a gold-standard country in 1896. Similarly, Russia, then on a paper standard, closed her mints to silver in 1893 and established herself on a gold basis in 1897.

Thus, the movement for the abandonment of the free coinage of silver and of bimetallism spread until at the end of the nineteenth century all the mints of Europe were closed to silver except for limited coinage on government account. The movement extended also to the Orient, where the mints of India, under the supervision of the British Government, were closed to silver in 1893, and the mints of Japan in 1897. The commercial world had become predominantly a gold-standard world.

5. BACKGROUND OF THE FREE SILVER MOVEMENT IN THE UNITED STATES

The ink had hardly dried on the Coinage Act of 1873 which had unobtrusively brought an end to bimetallism in the United States by the simple process of dropping the silver dollar — the only silver coin still subject to free and unlimited coinage — from the list of coins thereafter to be struck at the mint, when a movement for the restoration of the free coinage of silver got under way. This movement gained momentum in the late seventies and raged until the end of the century. In order that the reader may understand more clearly the economic forces behind it, it will be desirable to note a few essential facts concerning the nature and the quantity of our currency during and after the Civil War.

When the war broke out in 1861, the United States had been for some years virtually on the single gold standard, with silver in circulation only in the form of the light-weight subsidiary coins. The silver dollar was not being coined for circulation because its silver content was greater than its face value. The metallic money was supplemented by bank notes of a miscellaneous character issued by hundreds of banks, most of which had been inadequately supervised. A large proportion of the bank notes in circulation were depreciated below their face value, and some of them were practically worthless, with small probability of redemption in coin. At that time there were no gold and silver certificates in use — this form of currency not yet having been devised. Owing to inadequate financial preparation for the war, the disordered state of the bank-note currency, unwise measures by the Treasury, and general lack of confidence, banks throughout the country were compelled to suspend specie payment in December, 1861, and their example was perforce followed by the Government. There followed,

in 1862 and 1863, practically of necessity, the issue of \$450,000,000 in government paper money, variously referred to as United States notes, legal tenders, and greenbacks, for the three respective reasons that the money represented promissory notes of the United States, had legal-tender power, and was green in color.

The greenbacks, to adopt the most popular name for this issue of government money, were inconvertible — that is, not redeemable in gold — from the start, and remained so until the so-called resumption of specie payment in 1879. From 1862, then, to 1879, the country was on a paper-money basis, and a dollar meant, in effect, not 23.22 grains of gold or 371.25 grains of silver, but merely a promise, not certain to be kept, of the United States Government to pay a dollar in gold at some future time when its financial condition made it possible to pay. Prices were quoted in paper dollars, and rose with the quantity of these in circulation and with the uncertainty of their eventual redemption in gold. Silver did not circulate, since even the subsidiary silver coins were worth more as bullion than as money. Gold, when used as money, was at a premium in terms of the paper money, rising as high once as \$2.35 in paper for \$1 in gold, or \$0.35 in gold for \$1 in paper. After the war the premium on gold declined, the value of the paper dollar in terms of gold rising from an average of \$0.495 in 1865 to an average of \$0.811 in 1870, and then sharply higher to \$0.887 in 1871. Thereafter there was not much change in the value of the paper money until specie payment was imminent, when it rose close to parity with gold. The average for 1878 was \$0.975.

The main point to carry forward for our present purpose is that this *depreciation* of the greenbacks in terms of gold represented a corresponding *rise* in prices, and the *appreciation* of the greenbacks in terms of gold in turn represented a *fall* in prices. Gold prices, during the greenback period, fluctuated to some degree, but since the tendency of gold prices was upward during the war period, and downward after the war to the date of resumption of specie payment, the actual rise in paper prices was somewhat greater than the rate of depreciation of the paper money in gold, and the fall somewhat more rapid than the rate of appreciation of the paper money in gold.

In 1863 the National Banking System was established, representing a system of commercial banks chartered by the Federal Government, whereas before commercial banks had been exclusively under the supervision of the State Governments. The national banks were given the privilege of issuing bank notes upon condition of depositing with the United States Treasury, as security for redemption of the notes, United

States bonds exceeding the notes in value. After the war, in 1866, state bank notes were driven out of circulation by a prohibitive tax of ten per cent on the amount outstanding, leaving the national bank notes the sole form of bank-note currency. It is important to note that the national bank notes were limited in quantity, not only by a maximum figure fixed by Congress at first at \$300,000,000, but by the amount of government bonds available for purchase by the banks as security for the redemption of the notes.

From this unavoidable digression into the field of government paper money and bank notes to which detailed consideration will be given later, we return to our discussion of the silver question, which became acute after the panic of 1873. The panic of 1873 was the natural result of a period of overexpansion in certain industries, notably in the construction of railroads, not only in the United States, but in other countries as well. Opening up of vast new areas of grain-producing lands caused such an increase in output of farm products that prices collapsed. The demand for wheat and other agricultural products being notoriously inelastic, any rapid expansion in output is likely to be attended by a sharp fall in prices. At the same time industrial expansion was taking place through the ever-increasing use of labor-saving machinery, tending to bring about other maladjustments such as operate to precipitate financial panics. More significant for our present purpose, however, than the sharp crash of 1873 was the long period of financial and industrial depression that followed. It was this period of hard times that brought the silver question to the front in the United States. Gradually falling prices over a period of years suggested that the industrial stagnation was the result of an inadequate supply of money and that a more adequate supply of money would restore prosperity. Inquiry into the cause of the falling prices, using only figures available in the seventies, brings out the following significant facts:

1. The physical volume of production had rapidly increased.
2. The mints of the United States, Germany, France, and other countries had in recent years been closed to the free coinage of silver. In Germany much of the silver coin had actually been melted down and sold as bullion, its place being taken by gold purchased for the purpose. Thus, the supply of silver money in the world had been restricted.
3. Gold production of the world had fallen from an annual average of about \$130,000,000, over the twenty-year period from 1851 to 1870, to an annual average around \$115,000,000 a year over the period from 1871 to 1880.
4. In the United States bank-note circulation increased but little

during the seventies despite the fact that the upper limit of \$300,000,000 on bank-note circulation was removed, but fluctuated closely around the \$300,000,000 mark.

5. Bank deposits, the great substitute for bank notes and other forms of money, increased but little during the seventies, deposits of national banks rising only from \$602,000,000 in 1871 to \$649,000,000 in 1879.

6. The greenbacks during the seventies fluctuated in amount, but the tendency was downward, the low figure of \$321,000,000 having been reached in 1878, the year before resumption of specie payment.

7. During the seventies the total amount of money in circulation in the United States fluctuated, and while the general tendency was upward, the circulation per capita fell from \$20.08 in 1871 to \$17.23 in 1878, rising sharply thereafter for reasons to be given shortly.

In respect to the increase in the physical volume of production, referred to above, the following figures may be offered:

The production of wheat had increased from 231,000,000 bushels in 1871 to 420,000,000 in 1878; the production of corn from 992,000,000 bushels in 1871 to 1,388,000,000 in 1878, and the production of cotton from 2,974,000 bales in 1871 to 5,074,000 bales in 1878. These figures reflect the increase in production of agricultural products. But there were substantial increases in the production of non-agricultural products. For example, the production of pig iron increased from 1,707,000 tons in 1871 to 2,301,000 tons in 1878; the production of petroleum from 218,620,000 gallons in 1871 to 646,668,000 gallons in 1878; the production of coal from 42,000,000 tons in 1871 to 52,000,000 tons in 1878. While the statistics quoted are not broad enough in character to use as the basis of a good index of physical production, they do indicate beyond a doubt a sharp increase in the physical output of goods. On the contrary, the monetary statistics do not indicate a corresponding increase in the money supply. Here we have evidence — and this evidence was available to the people of the time — that the falling prices may have been, and probably were, at least in part, due to a deficiency in the supply of money and bank credit.

Hard times, falling prices, a real and not merely an imaginary shortage in the supply of money and credit — the situation was ideal for a "more money" campaign to flourish. It did flourish and not without interesting, if not always desirable, results. To the support of a movement for expansion of the currency a formidable array of inflationists could readily be assembled, to wit:

1. The poor, who turn instinctively to the idea that the cause of their poverty is the lack of money, and who in hard times embrace this idea

with great vigor. \ Included in this class are the wage-earners, who during periods of industrial stagnation not only find wages low, but employment hard to obtain.

2. The debtors, mainly in the agricultural sections of the South and West, who in this period of falling prices found it increasingly difficult to meet the payments of principal and interest on their debts, created optimistically in more prosperous times.

3. Business men with profits reduced or eliminated, and in many cases with bankruptcy threatening, their difficulties enhanced by sagging commodity prices.

4. Reputable economists who believed that the falling prices were in large measure the result of the demonetization of silver, that the falling price-level was an evil intensifying the business depression, and that it could be brought to an end by the world-wide restoration of the free coinage of silver.

5. Finally, a very special interest, the silver producers of the United States, who favored the free coinage of silver as a tonic for the sagging price of silver.

The campaign in favor of more money in the United States in the seventies took two forms — a clamor for an increase in the quantity of greenbacks to be issued and a movement favoring the free and unlimited coinage of silver at the mint ratio of 16 to 1, as established by the Coinage Act of 1837. It will be convenient to postpone the discussion of the greenback movement to a later chapter, noting here only that the success of the advocates of greenback inflation was limited. They succeeded in retaining indefinitely in circulation more than \$300,000,000 of the greenbacks which ought to have been retired, but not in bringing about a further expansion of these legal tenders beyond the amount originally issued during the war. The silver party's success was more substantial and their political activities more spectacular.

The fever for inflation by means of the free coinage of silver was heightened by the continued and sharp decline in the price of silver, resulting from a simultaneous increase in the supply of new silver from the mines and a decrease in demand for silver for monetary uses. Production of silver had increased from an annual average of 43,000,000 fine ounces for the five-year period, 1866 to 1870, to an annual average of 63,000,000 fine ounces for the next five-year period. This increase, coming at the very time when many mints were restricting coinage, and when Germany was actually throwing on the metal market old silver that had been coined, naturally exerted a severely depressing effect on prices. By 1876 the price of silver had reached a low point of \$1.035 an ounce in

New York, representing a market ratio to gold of approximately 20 to 1. From this low there was a partial recovery which held for about eight years, when a new and sharper decline set in which was to carry the price to a low of \$0.5275 in 1897.

6. THE BLAND-ALLISON ACT

In July, 1876, Representative "Silver Dick" Bland of Missouri introduced a bill into the House, providing for the free and unlimited coinage of silver at the mint ratio of 16 to 1, and this bill passed the House by a huge majority. In the Senate, the free and unlimited coinage provision of the bill was struck out, and the bill as it passed the Senate merely restored the full legal-tender power of the silver dollar and authorized the Secretary of the Treasury to purchase at the market price silver bullion amounting to not less than \$2,000,000 and to not more than \$4,000,000 worth a month, and to coin it into silver dollars. President Hayes, more conservative than Congress, vetoed this measure, but it was passed over his veto.

With the market price of silver below the face value of the coins into which it was to be minted, the Bland-Allison Silver Purchase Act, which remained in effect from 1878 to 1890, resulted in the coinage of more than 24,000,000 silver dollars a year, and the total number of silver dollars coined under the Act was 378,166,000. The amount would have been much larger if the various Secretaries of the Treasury had not been conservatively inclined to purchase the minimum and not the maximum amount of silver monthly.

It was under the Bland-Allison Act that silver certificates were first issued in the United States. The act provided that any holder of the silver dollars authorized under the act might deposit the same with the Treasurer of the United States in sums of not less than ten dollars and receive therefor certificates of not less than ten dollars each. The coin representing the certificates was to be retained in the Treasury for the payment of the certificates on demand. It was the expectation that the silver certificates would circulate more readily than the heavy silver dollars, which most people find too cumbersome to carry around. Later, silver certificates in the smaller denominations of \$1, \$2, and \$5 were issued, as an expedient to obtain a larger circulation of this representative money. The silver dollars themselves, being receivable for public dues, had a deplorable tendency to find their way rapidly back to the sub-treasuries as soon as they were paid out by the Government to meet its various expenses. Heavy money has never appealed to a large part of the American people, although the silver dollars have always re-

mained more or less abundantly in circulation west of the Mississippi and in some parts of the South. How popular the silver certificates were in contrast to the silver dollar is indicated by the fact that in 1890 \$297,556,000 in silver certificates were in circulation as against a total of 378,166,000 silver dollars coined under the Bland-Allison Act.

The Bland-Allison Act was a compromise measure, which, like most such measures, settled nothing and completely satisfied nobody. During the period of its operation a more or less persistent political struggle was carried on between the inflationists and the anti-inflationists. The one party was striving to enact a law providing for the free and unlimited coinage of silver at the mint ratio of 16 to 1; the other to bring an end to the compulsory purchase and coinage of silver by the Treasury. The division was not between Republicans and Democrats, but rather between the East on the one hand and the agricultural West and South on the other.¹ To a considerable degree this represented a sectional division on the basis of the creditor-debtor relation, the money-lending East and the borrowing West and South.

No less significant than the division on a geographical basis was the schism between the executive and legislative departments of the Federal Government. Congress was predominantly in favor of silver coinage on a large scale. Among the majority the difference of opinion of importance was on the degree of inflation to be permitted — whether it was to be represented merely by continued compulsory coinage of some millions of silver dollars a month or by free and unlimited coinage. Only a minority was opposed to inflation. The Executive, on the other hand, suffering less immediate terror of being ousted from office, and being compelled to face in a practical way certain problems arising from the injection of overvalued silver into the currency, was throughout the period urging moderation in the coinage of silver or even absolute suspension. Consider the financial problems of the Administration.

7. RESUMPTION OF SPECIE PAYMENT

In 1879 the Government had resumed specie payment — that is, had undertaken to redeem upon demand the greenbacks, or legal tenders, of which, at the time, something over \$300,000,000 were in circulation. The total monetary gold stock of the country in 1879 was \$246,000,000, of which the Treasury held, at the date of resumption, \$133,000,000. From these figures it is obvious that specie resumption did not mean, and could not mean, sudden retirement of the greenbacks. The Gov-

¹ From Hepburn, *History of Coinage and Currency in the United States*, p. 290. By permission of The Macmillan Company, publishers.

ernment had on hand less than half enough gold to retire the greenbacks at once, and if it had collected in taxes the gold once paid out in redemption, and used it over and over in redeeming the legal tenders until all were retired, it would not only have had to increase taxes substantially, but would have caused a contraction of the currency of approximately \$300,000,000, representing about one third of the total amount of money in circulation at the time. Politically, this was unthinkable; and even economically it would probably have been disastrous.

What resumption of specie payment really meant, then, was that the Government stood ready to redeem in gold any greenbacks that were presented for redemption. Few were in fact presented, since once the people were satisfied that the Government would redeem them in gold, they no longer had much interest in redemption. For most purposes the greenbacks, on a par with gold in value, were superior to gold. Those that were presented for redemption were for the most part quickly put into circulation again — the Government merely meeting, with the greenbacks that had been redeemed, certain expenses it otherwise would have met with the gold paid out in the redemption process. It must be remembered that there was a greenback party as well as a silver party during this period, and great political opposition to any action looking to the retirement or contraction of the greenback currency.

In fact, between the date of passage of the Bland-Allison Act in 1878 and the date of resumption of specie payment in 1879, Congress had passed a law forbidding the further retirement of United States legal-tender notes, and the amount outstanding then, approximately \$347,000,000, has to this day remained outstanding, although not always in actual circulation. Thus, by the Specie Resumption Act of 1875, providing for resumption in 1879, and the Anti-Retirement Act of 1878, which compelled the Treasury to pay out into circulation again all the greenbacks it redeemed, the Treasury was put under obligation to juggle the greenbacks until further notice from Congress, like a vaudeville performer juggling dumbbells, tossing them in the air with one hand and catching them skillfully with the other, and deftly keeping a stream of them whirling about in an astonishing circle. With the juggler there is ever present the danger that he will sometime miss his grasp, and the dumbbells will come tumbling to the floor with a dreadful crash. It should have occurred to Congress that sometime or other the Treasury likewise might miss its grasp, and that the circle of redemption might be broken. But Congress not only refused to consider this possibility and its probable disastrous consequences, but, like a mischievous small boy plaguing the performer, it proceeded eventually, as we shall see, to inject

a second stream of paper money into the circle, to the end that the antics of the Treasury became positively exhilarating.

8. THE VARIOUS KINDS OF MONEY, 1878-1890

At the time of resumption in 1879, the condition of the Treasury seemed precarious enough to instill some doubt as to the immediate success of the operation, since it held only \$133,000,000 in gold, and the total gold monetary stocks of the country were only \$246,000,000, or considerably less than the amount of greenbacks outstanding. But one of those happy turns in economic conditions which have more than once saved a bad situation in the United States was at hand. The long depression following 1873 came to an end, helped by abundant crops in the United States from 1878 to 1882 and scarcity in Europe, a combination of circumstances which swelled our exports, brought a favorable balance of trade, and caused a great influx of gold. International trade balances remained so favorable for some years that the gold stocks continued to increase rapidly until the high figure of \$706,000,000 was reached by 1888, after which there was a slight decline.

This great increase in the quantity of gold in the country, while the quantity of greenbacks outstanding remained unchanged, would, of course, have greatly reduced and probably eliminated the hazard that the Treasury would some day find itself unable to make payment in gold for all greenbacks presented, provided only other things had remained the same. It should be stated here provisionally that the larger the proportion of all money in the country is that consists of gold and the greater the confidence in the Government's ability to maintain gold payment, the larger will be the proportion of dues to the Government which will tend to be paid in gold, and the less gold will be demanded from the Government in redemption of paper and other non-standard money. Ample gold stocks in the country, then, with relation to the total amount of non-standard money, and a feeling of confidence in the Government which is likely to accompany the favorable gold situation, will tend to keep the Treasury so well supplied with gold that it can meet all its obligations for gold payment, such as interest on gold bonds and redemption of paper money. On the contrary, scanty supplies of gold in the country, large quantities of paper and overvalued silver money, and lack of confidence in the Government's ability to maintain payment in gold, tend to reduce the Government's receipts of gold at the same time that they increase the demands upon the Treasury for redemption of the non-standard money in gold, and thus threaten to force the Government to confess its inability to pay. Inability to pay

means depreciation of the non-standard money, paper or silver as the case may be, in terms of gold, and thus under Gresham's Law, the replacement of the gold standard by the cheaper standard of silver or paper.

In this connection the following statistics on the amount of money of various kinds in circulation during the period under discussion — 1878 to 1890 — are of interest:

TABLE I. THE AMOUNT AND KINDS OF MONEY IN CIRCULATION IN THE UNITED STATES ¹

KINDS OF MONEY	AMOUNT OF EACH KIND ON JUNE 30 (thousands of dollars)				
	1878	1881	1884	1887	1890
Gold	\$84,740	\$315,313	\$340,621	\$376,541	\$371,259
Gold certificates	24,898	5,760	71,147	91,225	130,831
Silver	60,127	76,182	86,351	104,133	110,311
Silver certificates	7	39,111	96,127	142,118	297,556
Greenbacks	320,906	328,127	318,687	326,667	334,689
National bank notes...	311,724	349,746	330,690	276,855	181,605
Total	\$820,004	\$1,114,238	\$1,243,926	\$1,317,539	\$1,429,251
Circulation per capita in dollars	\$17.23	\$21.71	\$22.65	\$22.45	\$22.82

Consider now the significance of these figures. In the twelve-year period, 1878 to 1890, the total amount of money in circulation had almost doubled, increasing from \$820,004,000 to \$1,429,251,000. During this period the amount of greenbacks in circulation varied but little, since no new ones were issued and no old ones retired. The slight variations in the amount in circulation can be accounted for by variations in the amount temporarily held by the Treasury.

The amount of national bank notes in circulation declined sharply from \$311,724,000 in 1878 to \$181,605,000 in 1890. This decline was primarily the result of the policy followed by the Government of reducing the public debt by retiring with its surplus revenue the bonds which the banks were required to buy as a condition of issuing their notes. The public debt was reduced from approximately two billions of dollars in 1878 to less than one billion in 1890, and owing to the growing scarcity of the bonds and their increasing desirability as investments, they rose in price above par, in some cases 30 per cent above par. Since at this time a national bank could issue its notes only up to 90 per cent of the par value of the bonds deposited with the Treasury, it was required to invest considerably more money in bonds to secure the circulation privi-

¹ Annual Report of the Secretary of the Treasury, 1928.

lege than the amount of the notes it could issue. The banks found it unprofitable to issue notes under these conditions and the total amount of bank notes in circulation naturally declined. This point requires further elucidation, and will be discussed in greater detail in a later chapter. Here the point to note particularly is that the amount of bank notes in circulation declined because of defects in the banking laws in force at the time.

The total amount of all kinds of money, then, other than gold and silver and gold and silver certificates, had declined from 1878 to 1890, and the aggregate increase in the amount of gold, silver, and gold and silver certificates was consequently greater than the increase in the total amount of all kinds of money combined.

9. THE TREASURY PROBLEM OF MAINTAINING GOLD PAYMENT

Had silver been good primary money, not overvalued at the mint, this would have been a most healthy development. But the silver dollars, having been coined out of bullion worth less than the face value of the coins, were in fact not primary money, although legally classed as standard money with full legal-tender power, but, to the extent that their face value exceeded their bullion value, credit money, akin to the greenbacks. So long as they were issued in moderate amounts and remained interchangeable with gold coin, they would remain at par with gold, but, if they should become so abundant that the Government could not redeem them in gold upon demand, they might be expected to depreciate below their face value in gold money and, endowed with legal-tender power, drive gold out of circulation. The lower the market price of silver dropped, the more closely the silver dollars, and consequently the silver certificates, resembled credit money, and the more their value depended upon their interchangeability with gold money. The lowest price reached by silver before 1892 was 92 cents an ounce in 1888, and at that price the bullion value of a silver dollar was 71 cents. A silver dollar might then have been considered to consist of 71 cents' worth of silver plus a 29-cent promise of the Government to pay in gold.

There was no direct obligation placed upon the Treasury to redeem the silver dollars or the silver certificates in gold, but the obligation was implied. There was even no direct obligation placed upon the Government by the Specie Resumption Act to redeem the greenbacks in gold. The act merely required that the greenbacks be redeemed in coin, and coin might be either silver or gold. But the Treasury had undertaken to maintain redemption of the greenbacks in gold directly; and indirectly to maintain silver on a par with gold.

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The problem of the Treasury, then, in 1890, was not to maintain the comparatively small amount of greenbacks in circulation on a par with gold and silver money, amounting in the aggregate to more than \$900,000,000, but to keep the greenbacks and the silver money, amounting together to more than \$700,000,000, on a par with gold, of which there was only about \$500,000,000 in circulation. So long as the Silver Purchase Act remained in operation, the amount of silver money would keep on increasing. The amount of greenbacks was fixed by law and would remain unchanged until the law was amended. The question, then, was, Would the amount of gold money increase rapidly enough and would the revenues of the Government received in the form of gold be abundant enough to permit the Government to maintain gold payments and the gold standard? There were many who feared that this would not be the case, and the very fact that these fears existed tended to bring about the crisis that was feared. Gold tended to be held back by the banks and hoarded by the general public while customs dues and other government dues were paid in silver dollars or silver certificates. As uneasiness increased, greenbacks tended to be more freely presented for redemption in gold. Thus the obligation of the Government to pay in gold was increased while its capacity to pay was reduced. It was not enough for the Government merely to have ample revenues and a balanced budget; it had to have ample revenues in gold, and gold it could not demand from those who preferred to pay in silver.

The "internal drain" of gold from the Treasury, resulting from such a lack of confidence in the Government that the banks and the people demanded gold from the Government and hoarded it, while they paid their obligations to the Government in silver and legal tenders, was not the only conceivable menace to the maintenance of the gold standard. There was always possible an external drain growing out of the lack of confidence of foreigners in the stability of our monetary system. Should Englishmen, Frenchmen, and others who had investments in the United States become doubtful about the ability or the inclination of the Government to stick to the gold standard, they would proceed to liquidate their investments in the United States. The sale of their bonds and stocks to Americans would represent in effect so many additional imports, which, added to imports of goods, would result in an unfavorable balance of trade. Trade balances being settled in gold, the result would be heavy gold exports and a sharp decline in the gold stocks of the country, and greater difficulties for the Government in obtaining enough gold revenue to meet its gold obligations.

To add to the dangers of the situation there had been during the

twelve-year period, 1878 to 1890, a very considerable inflation of bank deposits. The deposits of the national banks increased from \$622,000,000 in 1878 to \$1,522,000,000 in 1890, an increase of approximately 150 per cent, while the deposits of state banks, during the same period, rose from \$143,000,000 to \$553,000,000, an increase of more than 280 per cent. The increase in bank deposits had more than kept pace with the expansion of the currency which had, as previously noted, just about doubled between 1878 and 1890. Any great drain of gold from the country under the circumstances would therefore have caused a contraction in bank credit or suspension of gold payment by the banks.

Still another aspect of the matter was this: if the United States persisted in a policy of expansion of the currency, by constantly increasing the quantity of silver money, while other leading commercial countries did not, there was danger that our domestic price-level would tend to rise above the world level, that our exports would not grow in proportion to our imports and that our stock of gold money would be exhausted in settling ordinary trade balances, even though Europeans did not take fright and unload upon us their American securities. In fact, something of this very sort is indicated by the import and export statistics of the time. During the early and middle seventies, before our silver coinage began, our exports had expanded very rapidly, rising from \$286,000,000 in 1869 to \$695,000,000 in 1878. During the same time imports had actually declined from \$438,000,000 in 1869 to \$432,000,000 in 1878. But from these figures in 1878 exports rose only to \$858,000,000 in 1890, an increase of \$163,000,000, while imports rose to \$823,000,000, an increase of \$391,000,000.

The monetary dangers of the situation were recognized and frequently and often vigorously pointed out by successive Secretaries of the Treasury under both Republican and Democratic Administrations, and the recommendations for suspension of silver coinage became more vigorous with each passing year. But Congress, with its ears to the grass roots, heard ominous rumblings of agricultural discontent; heard also "the roar of maddened labor," sounding "like a trumpet-blast of prophecy," and these disturbing sounds doubtless drowned out the voices of the Secretaries of the Treasury, crying their alarms. Moreover, the silver Congressmen were little concerned over the maintenance of the gold standard and what might befall gold, "the money of monarchs," the "idol of the miser and the thief," the "most cowardly and treacherous of all metals."¹ A financial and commercial panic in 1884

¹ The quotations are from Bullock, *Monetary History of the United States*, pp. 113-14. By permission of The Macmillan Company, publishers. The original source is the Congressional Record.

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and the ensuing period of depression strengthened the position of the inflationists, since the demand for more money ordinarily grows stronger during periods of hard times and unemployment.

10. THE SHERMAN SILVER PURCHASE ACT¹

In 1890, the silver party, having failed to achieve its goal of the free and unlimited coinage of silver at the mint ratio of 16 to 1, was satisfied to accept another compromise measure, the so-called Sherman Silver Purchase Act. This law provided for a continuation of the policy of Treasury purchases of silver to be coined into dollars with full legal-tender power, but with important changes in the conditions under which the silver was to be purchased and coined, such that inflation would now not only proceed at a more rapid pace, but that more legal-tender paper money would be forced into circulation. Briefly stated, the significant provisions of the Sherman Act were as follows:

The Secretary of the Treasury was directed to purchase each month 4,500,000 ounces of silver bullion at the market price, not exceeding one dollar for 371.25 grains of pure silver, and to issue in payment treasury notes in denominations ranging from \$1 to \$1000. These treasury notes were made redeemable on demand in coin, and were made legal tender in payment of all debts, public or private, except where otherwise expressly stipulated in the contract. The Secretary of the Treasury was given his option to redeem the notes presented in gold or silver coin, but the law announced the policy of the Government to be to maintain the two metals on a parity with each other at the legal ratio of 16 to 1. Until July, 1891, the Government was to continue coining 2,000,000 ounces of bullion a month into standard silver dollars, but thereafter was to coin only as much of the purchased bullion as was necessary to redeem the treasury notes.

The immediate result of the operation of this law was an increase in the quantity of silver bought monthly. Under the Bland-Allison Act, it had been the policy of the various administrations conservatively to buy the minimum amount of silver required by law, \$2,000,000 worth a month. The largest quantity of silver bought under the Bland-Allison Act, as well as the largest amount paid for the bullion, and the greatest number of silver dollars coined in any one year, was in 1890, when 28,000,000 fine ounces of bullion were purchased, at a cost of \$27,000,000, and coined into 38,000,000 dollars.

Under the new law the amount of silver bought in 1891, not a full

¹ Most of the statistics in Sections 10-12 of this chapter are from Hepburn, *History of Coinage and Currency*. By permission of The Macmillan Company, publishers.

fiscal year, was 48,000,000 ounces, and the total amount expended for this bullion, at an average cost of \$1.0451 an ounce, was \$51,000,000, with a corresponding inflation of the currency with the treasury notes, comparatively few of the treasury notes being redeemed and consequently not many silver dollars being coined and placed in circulation. During the two full fiscal years in which the Sherman Act remained in force, 1892 and 1893, 54,000,000 ounces of fine silver were bought each year, at a cost of \$51,000,000 the first year and, the price of silver having fallen, at a cost of \$45,000,000 the second year.

Fortunately, and for reasons shortly to be given, the Sherman Act was repealed in November, 1893, and the compulsory purchases of silver by the Treasury for the purpose of inflation came to an end. The total amount of silver purchased under the Sherman Act was 168,000,000 fine ounces, and the total cost thereof was \$156,000,000, the last-named figure representing the addition to the currency resulting from this law. Most of the silver bought under the law remained uncoined until after its repeal, and the treasury notes issued remained, in large part, outstanding until after 1894. The \$156,000,000 in treasury notes issued, added to the \$347,000,000 in greenbacks outstanding, made a total of legal-tender issues in excess of \$500,000,000, all of which the Treasury had to stand ready to redeem in gold upon demand. While the Government might have stood upon the letter of the law and redeemed the legal tenders of both varieties with silver dollars, the Administrations in power clung at all times to the plan of redemption in gold. To have deemed in silver would have been to confess inability to redeem in gold, and this would have at once resulted in a premium on gold coin in terms of silver, the expulsion of gold from circulation, and the establishment of the overvalued silver dollar as the standard of value.

In addition to the \$500,000,000 of legal tenders outstanding in 1893, there were in circulation on July 1, 1893, almost \$400,000,000 in silver dollars and silver certificates, which were themselves akin to legal-tender credit money which had to be sustained in value by its convertibility into gold, and the burden of thus maintaining the value of this huge sum of paper and overvalued silver money, \$900,000,000, was thrown upon a much smaller amount of gold in circulation and in the treasury namely, approximately \$600,000,000.

11. THE SHRINKING GOLD RESERVE AND THE PANIC OF 1893

Shortly after the passage of the Sherman Act the gold reserve of the Treasury began to decline, and soon alarm was felt concerning the maintenance of the gold standard. The decline in the gold reserve was a

resultant of various causes the exact relative importance of which cannot definitely be determined. On the one hand, customs revenues fell off, partly because of changes in tariff rates by the Tariff Act of 1890. On the other hand, government expenditures were increased by a new pension law. Thus, the annual surplus of the Treasury, or excess of ordinary receipts over ordinary disbursements, fell from \$85,000,000 in 1890 to \$27,000,000 in 1891; fell further to \$10,000,000 in 1892, and to less than \$3,000,000 in 1893; and in 1894 there was a deficit of \$61,000,000.

From 1889 to 1896, inclusive, there was each year an excess of gold exports over gold imports, this excess amounting to \$68,000,000 in 1891 and to \$210,000,000 in the five-year period, 1889 to 1893, or \$42,000,000 more than the total gold production of the United States during the same five years. There was consequently a decline in the total stock of monetary gold in the country, reducing to some extent the likelihood that government dues would be paid in gold.

The shrinking gold reserve, the declining surplus, the gold exports, and the continued purchase of silver with its concomitant increase in the issue of treasury notes all contributed to a growing feeling of uneasiness, and this led to a further drain of gold away from the Treasury both for export and domestic use or hoarding. Even more embarrassing to the Government than declining receipts, accompanied by swelling disbursements tending to wipe out a surplus and to produce a deficit, was the rapidly declining proportion of the customs receipts paid in gold and the increasing proportion paid in silver coin and certificates, greenbacks and treasury notes. In January, 1890, 92.6 per cent of the customs receipts at New York were in gold, and only 7.4 per cent in silver and legal tenders, and while there were seasonal fluctuations in these proportions from month to month, the relative figures were still 88.6 per cent and 11.4 per cent in January, 1891. But by January, 1892, the percentage of customs receipts in gold was 66.2 per cent, as against 33.8 per cent for the silver and legal tenders, and in January, 1893, the proportion of gold had dropped to 4.4 per cent, while that of silver, greenbacks, and treasury notes had risen to 95.6 per cent.¹

The crisis came in 1893. Cleveland's second term began on March 4, 1893, and the new Administration was pledged to a revision of the tariff. Pending the change in tariff rates, business operations slowed down, unemployment increased, and government revenues declined. Helping to undermine confidence was the fact that the new Secretary of the

¹ These statistics of customs receipts are from Taussig, *The Silver Situation in the United States*, p. 58, where a table is presented giving corresponding figures for each month from January, 1890, to January, 1893.

Treasury, Carlisle, was an advocate of the free coinage of silver and the consequent fear that he might resort to redeeming treasury notes, as he legally could, in silver coin. Confidence abroad being further impaired, Europeans began selling American securities, as might have been expected under the circumstances, thus bringing about an additional export of gold, so that the net loss in the fiscal year 1893 amounted to \$87,500,000.

Bankers who needed gold for export or other purposes carried greenbacks and treasury notes to the Treasury for redemption, and in this year, 1893, more than \$100,000,000 of the legal tenders of both kinds were redeemed in gold. By April the gold reserves had fallen below \$100,000,000 — the danger-mark as it was considered at the time. In June came the news that the mints of India had been closed to the free coinage of silver, and this brought further demoralization into the silver market, silver falling to a low of 65 cents an ounce in 1893 as against a low of 83 cents the year before. In so far as the fear of a silver standard of value was a cause of financial uneasiness, the rapid and severe fall in the price of silver intensified this fear. Finally the storm broke, and one of the worst panics in our history demoralized the whole business structure. Bank failures and commercial failures mounted to record figures and practically all banks temporarily suspended specie payment. In the midst of the panic, Cleveland, who had been opposed to the silver inflation movement, called an extra session of Congress and managed to secure the repeal of the Sherman Act, which had now been in operation about three years. Silver purchases came to an end in November, 1893.

12. THE ENDLESS CHAIN AND THE BOND ISSUES

In whatever measure the Sherman Act had been responsible for the panic of 1893, its repeal did not at once bring an end to the period of depression nor to the difficulties of the Government in maintaining the gold standard. Various indices of business activity pointed to an unusually severe depression in 1894, following the panic. It was a time of great unemployment and of breadlines and soup-houses. Total ordinary receipts of the Government fell from \$386,000,000 in the fiscal year 1893 to \$306,000,000 in the fiscal year 1894, a decline of \$80,000,000, or 21 per cent. Expenditures falling only slightly, the result was a deficit for the year of \$61,000,000, in contrast to a small surplus the year before. Further but smaller deficits followed in the succeeding years of depression, so that in the aggregate the ordinary receipts of the Government during Cleveland's second term were less than the expenditures, and

more than \$200,000,000 of current expenses during the four years were met from the proceeds of bond issues.

The bond issues would have been necessary in any event to meet the persistent annual deficit of the Treasury, but they were rendered doubly imperative as a device to maintain specie payment. The demand for redemption of legal tenders continuing after the year of the panic, the government revenues remaining less than expenditures, and consisting only in small part of gold, bond issues, in the absence of increased taxation which the Administration did not energetically advocate, remained the sole remedy, to make up the deficiency, not only in total revenue, but also in gold revenue. In the two years 1894 and 1895 the total amount of legal tenders redeemed in gold had been more than \$200,000,000, and in 1896 the amount exceeded \$150,000,000. In 1894 two bond issues contributed \$117,000,000 in gold to the Treasury, and two more issues in 1895 yielded an additional \$176,000,000.

A troublesome feature of this financing has received much attention. The bonds were sold for the purpose of adding to the gold supply of the Treasury, but much of the gold paid for the bonds by the bankers was first obtained by presenting at the Treasury legal tenders for redemption. The result was that the Government lost almost as much gold as it gained. In obtaining the gold by this means, for the purpose of redeeming legal tenders, the Treasury increased the amount of legal tenders presented for redemption. If the Treasury had been rich enough in revenue to lock up the legal tenders redeemed at each successive bond issue, it would soon have dried up the incoming stream of legal tenders, but owing to its chronic poverty during this period the Government had to pay out the greenbacks and the treasury notes as fast as they were redeemed in order to meet current expenses, and when they were paid out they soon returned again for redemption. These bond and redemption operations are commonly referred to as the "endless chain."

It should not be forgotten, however, that the bond issues served a double purpose. They not only provided gold by means of which the Government might redeem legal tenders, but they added to the total receipts of the Treasury \$293,000,000, of which more than \$204,000,000 was required in addition to current revenue to meet current expenditures. While the bond issues did not add as much to the Government's net gold supply as might have been hoped, owing to the operation of the endless chain, they did add by the amount of their issue to the Government's total available supply of funds, and without them, in the absence of increased revenue from taxation, the Government would not merely have been obliged to suspend gold payments, but payment in the form

of cash of any kind, other than new and additional issues of legal tenders. They saved the Government the shame of a confession of bankruptcy, and they saved the gold standard. This point is emphasized because it seems sometimes to be implied that the bond issues were in vain — their good effects being nullified by the endless chain.

13. DID THE SILVER PURCHASE ACTS CAUSE THE PANIC OF 1893?

Whether or not we should have had the panic of 1893 if there had been no compulsory purchases of silver by the Treasury, and no injection of silver certificates and treasury notes into circulation, is perhaps a useless question to debate. Undoubtedly, as sufficiently emphasized in the foregoing discussion, the inflation of the currency with legal tenders and overvalued silver was an important contributory factor. The total amount of money in circulation in the United States had increased from \$820,000,000, or \$17.23 per capita, on June 30, 1878, to \$1,597,000,000, or \$24.06 per capita, on June 30, 1893. A large part of this increase was represented by the increase in silver dollars, silver certificates, and treasury notes of 1890, the total increase of these three kinds of money having been about \$517,000,000, leaving a net increase in other kinds of money of \$260,000,000. The amount of greenbacks, subsidiary silver, and national bank notes had in the aggregate decreased during this time, while the amount of gold had increased \$392,000,000.

What would have been the monetary situation in the United States in 1893 if the silver had not been injected? No one knows. In all probability, however, the total amount of money would have been less and the total amount of gold would have been more. It is an altogether reasonable assumption that the continuous pouring of silver into our mints, increasing our total stock of money, tended to maintain prices in the United States at a little higher level than they would otherwise have been, and tended, therefore, to encourage imports, discourage exports, and to bring about a larger net export of gold to settle trade balances. A special cause for larger exports of gold, or of diminished imports of gold, was the artificial demand for silver created by our coinage acts; if the silver we coined or locked up in the Treasury had been exported at its bullion value, net exports of gold would have been smaller, or net imports would have been greater during the years 1878 to 1893. We might have had the panic of 1893, anyway, but it would then have been primarily a banking panic brought about by inflation of bank credit, and not a panic involving the danger of suspension of gold payment by the United States Treasury.

14. THE CAMPAIGNS OF BRYAN

So long as the silver party remained unsuccessful in destroying the gold standard through excessive coinage of silver and so long as prices in the United States remained gold prices, the prices of freely transportable goods of which we produced an exportable surplus, such as agricultural products, could not be forced above the world level, but would perforce remain below the prices prevailing for these commodities in the European importing countries, regardless of the quantity of overvalued silver or paper legal tenders injected into circulation. Unless an export bounty is paid on exports, the domestic prices of commodities of which an exportable surplus is being produced will always tend to be the price in the importing country less the cost of transportation. The gold price of wheat in the United States, for example, could not be forced above the gold price of wheat in England, which imported part of our surplus, and currency inflation in the United States was therefore powerless to raise the price of wheat in gold in the United States unless it could also raise the gold price of wheat in England and the importing world in general, which was obviously impossible. This seems to have been pretty well understood by the shrewder leaders of the silver party, although not by the rank and file of the inflationists, who were not capable of the sustained reasoning leading to this conclusion; and during the whole silver-purchasing period the leaders of the party were striving to attain their real goal — the free and unlimited coinage of silver at the mint ratio of 16 to 1, and the consequent substitution of a cheap silver dollar for the dear gold dollar. The higher the market ratio of silver to gold rose, the cheaper became a silver dollar of 371.25 grains and the more eager became the inflationists to substitute it for the standard gold dollar of 23.22 grains.

Powerful as the silver advocates had been during the period from 1876 to 1893, they had never succeeded in capturing the entire party machinery of either of the major parties. Although at times mustering a majority for their measures in both houses of Congress, they had to fight, a great deal of the time, a more or less hostile Administration. But in the Presidential campaign year of 1896 the free silver faction seized control of the Democratic Party, and, pushing aside their old leader, "Silver Dick" Bland, nominated the young, vigorous, and eloquent William Jennings Bryan of Nebraska as their candidate for the Presidency. Obtaining the support of the Populist or Greenback Party, they failed by only a narrow margin in electing their candidate. A shift of five per cent of the vote east would have placed in the White House, instead of McKinley, Bryan, committed by his platform and his cam-

paign speeches to the adoption of the bimetallic standard at the mint ratio of 16 to 1. Had Bryan been elected, Congress would doubtless have passed, and the President would have signed, a law providing for the free and unlimited coinage of silver at the mint ratio of 16 to 1, and with the market ratio above 30 to 1, this would have meant, not bimetalism in fact, but the substitution of the silver standard for the gold standard, and consequently a very sharp rise in prices.

15. THE FIFTY-CENT DOLLAR

During the campaign the outstanding argument of the Democrats was, of course, that the one thing needed to restore prosperity was more money, and this would be provided by the Democrats if they won the election. This was a dangerous argument to controvert by the counter-statement that the country did not need more money, because most voters would not believe in such an apparent absurdity. The most common belief among the people was, had been, and presumably ever will be, that no man and no country can ever have enough money. Consequently, the shrewder Republican orators made much of the "fifty-cent dollar" which the Democrats were intent upon foisting upon an unsuspecting country. A fifty-cent dollar would appear at least as absurd to the average man as the idea that a country could have too much money.

The basis of the charge brought against the Democrats that they contemplated a fifty-cent dollar was, of course, the fact that, at the prevailing market ratio of silver to gold, the bullion content of the silver dollar of 371.25 grains was worth about fifty cents in gold. The assumption was that this market ratio would prevail after the adoption of bimetalism, and that once the silver dollars were no longer redeemable in gold, as they would not be under free coinage of silver, they would sink in value to the value of their bullion content. The new standard silver dollar, legal tender in payment of debts, would then have a purchasing power only half as great as the old gold dollar.

Deductive reasoning does not sustain the view that prices would have doubled at once if bimetalism had been adopted at the mint ratio of 16 to 1, while the market ratio was approximately 32 to 1. Both the quantity theory of money and the theory of the compensatory action must here be taken into consideration. For silver dollars to displace the gold money in circulation in 1897 would have required the displacement of about \$550,000,000 in gold by \$550,000,000 in silver. But the simple displacement of \$550,000,000 in gold money by an equal amount of silver money would not, according to the quantity theory of money, have per-

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mitted a one hundred per cent rise in prices. Before there could be such a rise in prices there would have to be an increase of approximately one hundred per cent in the total amount of money in circulation, unless it is to be assumed that the ratio of bank deposits to cash reserves would rise or that the velocity of circulation of money and bank deposits would increase. In this connection it should be emphasized that the case for the quantity theory of money is very strong where the possibility of a rise in prices is being considered. Unless bank reserves are abnormally high or the velocity of circulation of money and bank deposits abnormally low, there can be no significant increase in prices without either an increase in the quantity of money or a decrease in the physical volume of trade. The cash reserve ratio of the national banks was somewhat higher in 1897 than in the following years down to 1907, and it is probable also that the velocity of circulation was low, but these factors alone, without any increase in the supply of money, would not have permitted a great rise in prices, particularly with an expanding volume of trade.

Now, the amount of money in circulation on June 30, 1897, was \$1,641,000,000. If the amount of money in circulation was to be doubled at the same time that the \$550,000,000 in gold money was expelled from circulation, something like \$2,200,000,000 of additional money would have been required. Even if only half this much additional silver had been required, it would have represented more than the total world production of silver during the five years, 1896 to 1900, inclusive, which would have been sufficient to coin only 1,071,000,000 silver dollars. Hence, to bring about the price revolution that it was assumed at the time would be almost an instantaneous result of Bryan's election would have required either a period of five or more years while all the world's silver production was being brought to the American mint to be coined into silver dollars, or it would have required that much of the world's old accumulated store of silver would have been enticed from its hiding-places and shipped to the American mint, or, as an alternative, that world production of silver would have been enormously stimulated by our free silver experiment, so that production during the period immediately after 1896 would have been much greater than it actually turned out to be as things developed. But it was not to be expected that the world's accumulated stock of old silver would rush to our mints, or that the world production of new silver would increase, without a material rise in the value of silver in terms of gold and other commodities. A sudden doubling of prices in the United States, then, by the adoption in 1897 of the silver dollar as a standard of value would have been logically impossible. A sharp rise in prices there would, however, have been.

To these conclusions it may be added that the expulsion from the United States of something like \$550,000,000 of gold plus most of the new gold currently produced would have tended to cheapen gold on the world market, at the same time, as indicated, that the value of silver would have been forced up by the increased demand at our mints. The market ratio of silver to gold would then have fallen quite substantially, possibly to 20 to 1, or even lower, temporarily. The result would have been a small rise in prices in gold-standard countries, and a much more substantial rise in prices in terms of silver money in the United States. With the growing production of silver in the world, the rise in prices in the United States would have continued until after a few years prices would actually, in all probability, have been twice as high in terms of silver as they had been in 1896 in terms of gold. The United States alone could not have indefinitely absorbed enough silver in its coinage to affect materially the world market ratio of silver to gold.

16. THE GOLD-STANDARD ACT OF 1900

Bryan, although defeated on the free silver issue in 1896, still had hopes of winning the election on this issue in 1900; but in 1900, when nominated a second time, he was defeated more decisively than in 1896, and bimetallism as a Presidential campaign issue was apparently dead. For a generation, indeed, bimetallism ceased to be even a topic of conversation in the United States, except in college classes on money and banking and economic history. With the sharp decline in prices, however, following the financial crash of 1929, it has again become an important political issue. Economists in some quarters are beginning to speak favorably of it, and there is a possibility that some form of bimetallism will be established on an international basis.

The decisive defeat of Bryan in 1900 may in part be attributed to the popularity of McKinley, the Republican candidate who had become a war President — the Commander-in-Chief of our popular and victorious war with Spain. But in the main Bryan owed his defeat to the return of prosperity. The return of the prosperity that defeated Bryan, strangely enough, was hastened by an increase in the supply of money and rising prices, the things for which he had been contending in his campaigns. Accident and invention had accomplished what Bryan could not achieve by oratory and persuasion. As a result of newly discovered gold deposits and new and more efficient methods of extracting the gold from known deposits of ore, the gold production of the world had been increasing rapidly ever since 1890, and had increased more rapidly after 1896. It took some years for the increased annual production to affect ma-

terially the world stocks of gold and world prices, but by 1900 the world stocks of gold were \$2,000,000,000 larger than in 1890, and the whole world was beginning to feel the effects in a rising price-level, which naturally stimulated industry and trade. A tremendous expansion in our excess of exports of commodities over imports resulted in net imports of gold amounting to more than \$200,000,000 in the three years 1898 to 1900, a large part of which was added to our gold monetary stock. At the same time there was considerable expansion in our other kinds of money, notably in national bank notes, so that the total amount of money in circulation had increased from \$1,506,000,000 on June 30, 1896, or \$21.44 per capita, to \$2,081,000,000 on June 30, 1900, or \$27.28 per capita. By 1900 the trend of prices had been distinctly upward in the United States for three or four years, and it was not a propitious time to stage a campaign for more money — such campaigns succeed best in times of falling prices and business depression. Besides the Republicans could point with pride to the prosperity they had produced, and could view with alarm, as in 1896, the fifty-cent dollar of the Democrats.

The chief legislative aftermath of the success of the "sound money" party in 1896 was the Gold-Standard Act passed in March, 1900, the main provisions of which were the following:

1. The gold dollar of 25.8 grains of gold nine tenths fine was made the standard of value, and it was made the duty of the Secretary of the Treasury to maintain all forms of money issued or coined on a parity with this standard.

2. A gold reserve of \$150,000,000 was specifically provided for the redemption of greenbacks and treasury notes of 1890.

3. It was made the duty of the Secretary of the Treasury to retire and cancel treasury notes of 1890 as fast as silver dollars were coined from the bullion purchased under the Sherman Act of 1890, and upon the cancellation of the treasury notes to issue silver certificates against the silver dollars so coined.

4. The Secretary of the Treasury was authorized to use, at his discretion, any silver bullion in the Treasury purchased under the Sherman Act for coinage into subsidiary silver coin of such denominations as might be necessary to meet public requirements, provided that the total amount of subsidiary silver coin outstanding at any time should not exceed \$100,000,000. Whenever any silver purchased under the Sherman Act was thus used for subsidiary coinage, treasury notes of 1890 should be canceled to the amount of the cost of the bullion coined.

5. The issue of national bank notes was made more profitable for na-

tional banks, thus encouraging the expansion of this form of currency.

The Gold-Standard Act of 1900, it may be observed, made it the duty of the Secretary of the Treasury to maintain all forms of money at a parity with gold, whereas before the Treasury had not been under legal obligation to maintain such parity, but had only endeavored to maintain the gold standard as a conservative monetary policy. This Gold-Standard Act was challenged, as we have seen, by Bryan in his second campaign immediately after its passage. After 1900 the gold standard not only remained practically free from political attack, but became so firmly established economically, through a substantial and long-continued increase in our gold supply, that all doubts as to the possibility of its maintenance were dispelled until the inflation of the currency with federal reserve notes during and after the World War.

17. CONCLUSIONS

This chapter may fittingly be ended with some reflections on the wisdom of the policy of demonetization of silver by Europe and the United States during the last third of the nineteenth century. Undoubtedly the demonetization of silver had been a prime cause of the falling price-level from 1873 to 1896, and a contributory cause to the prolonged periods of depression during this time — depressions tending to be longer during times when the secular trend of prices is downward than during times when it is upward. After demonetization of silver had been practically completed, with its depressing influence on world prices, there came the great increase in gold production beginning about 1890 and resulting, in the period of about twenty years before the opening of the World War, in a very substantial rise in the general level of prices, tending to generate all the evils associated with such movements — widespread speculation in commodities, securities, and real estate; financial disturbances, and panics, followed by depression, as well as the gradual destruction of a part of the purchasing power of persons dependent upon fixed incomes derived from investments in bonds, mortgages, insurance policies, and the like.

Had demonetization of silver, if it had to come, been postponed until during the middle and late nineties, these two broad price movements — first the downward sweep and then the upward sweep — would in large measure have been avoided, with incalculable advantages, both economic and political, to the world. The temporary spurt in gold production during the period from 1850 to 1870, and the consequent fall in the market ratio of silver to gold, was an unkind trick of fate which hurried the nations of the world, incapable at the time of unselfish

co-operation in a far-sighted monetary policy, on to the partial demonetization of silver by the various laws relating to subsidiary silver coinage. Then, when production of silver increased with relation to gold, and they were threatened with the loss of their gold with bimetallism retained at the old mint ratios, they began a race to complete the demonetization of silver and in a virtual panic to rid themselves of the depreciating metal. Thus, in a mad scramble of the nations to rid themselves of silver coinage and to retain gold, the mints were closed to the metal which alone could have provided the world with sufficient standard money to prevent a calamitous decline in prices.

Instead of abandoning bimetallism one by one, the nations of the world should have united for its retention at least until near the end of the nineteenth century. The stabilizing effect this would have had upon world prices becomes evident from a very casual inspection of the statistics of gold and silver production from 1870 to 1900. Whereas gold production declined from 6,270,000 fine ounces in 1870 to 5,749,000 in 1890, silver production increased from 43,052,000 fine ounces in 1870 to 126,095,000 fine ounces in 1890; and these figures of these two years represent fairly the trend over the whole period. Then during the next ten years, when gold production more than doubled, silver production increased less than forty per cent. But while the nations of the world had a common interest in business stability, they had also such divergent selfish interests that successful international co-operation in the retention of bimetallism during this period was impossible, although international conferences were repeatedly held to consider what might be done.

CHAPTER VIII

GOVERNMENT PAPER MONEY IN UTOPIA

1. WHY GOVERNMENT PAPER MONEY IS ISSUED

IN OUR introductory chapter the nature of the various kinds of government paper money in circulation in the United States was briefly described — the gold and silver certificates and the United States notes, commonly called "greenbacks." Our gold and silver certificates, representing merely warehouse receipts for gold and silver held in the Treasury, involve no important monetary principles and have occasioned no monetary controversies in the United States other than those connected with the coinage of the silver dollars, and therefore require no further consideration in this volume. The treasury notes of 1890 mentioned in Chapter I, issued under special circumstances during the metallic controversy and now apparently completely out of circulation, have been sufficiently discussed in Chapter VII, and require no more attention. In this chapter and the next we may, then, confine our discussion to that particular type of government paper money represented by the greenbacks, a type which, as already pointed out, may be called credit money, but which often becomes what may more properly be called inconvertible paper or fiat money.

Credit money was issued in varying quantities by each of the thirteen colonies, by the Continental Congress, by the majority of the states in the interval between the end of the Revolutionary War and the adoption of the Constitution, and finally by the Federal Government during the Civil War. The results of these issues of government paper money were uniformly bad — the paper money causing not only great losses to particular classes of people, but also to the country and the people as a whole.

The question naturally arises, Why did the colonial Governments, our state Governments, and the Federal Government resort repeatedly to the use of money of a type which without exception turned out to be bad money? Why did not a few disastrous early experiments teach our people that wisdom lay in avoiding this mischievous medium of exchange? The answer is that there are various reasons for issuing government credit money, and they are not all bad reasons. In fact, a very good case may be made out by abstract reasoning in favor of printing a limited quantity of government paper money. A limited quantity may conceivably result in a net gain to the Government and to the whole

people. It is this reasonable possibility of realizing a net gain from the use of government credit money added to a host of fallacious arguments in favor of the issue of such money that makes it difficult for those more conservatively inclined to defeat movements for setting the government printing presses in operation.

2. THE UTOPIANS CONSIDER THE ISSUE OF CREDIT MONEY

In considering the possible benefits to be realized by the issue of a moderate amount of government credit money, we may with advantage turn to the experience of Utopia. In Utopia, contrary to certain unsubstantiated statements of Sir Thomas More, all things had not yet reached absolute perfection, as we shall see in a moment, but the Government was at least composed of a body of intelligent men primarily interested in the welfare of the people, and the people were content to let the intelligent government officials mould the monetary system into the form most advantageous to all. At the time the Utopians decided to embark upon their great experiment with credit money, they had adopted the gold dollar as their sole unit of value, and their money consisted of \$900,000,000 in gold coin, part of which lay in the Treasury and was represented in circulation by gold certificates, and of \$100,000,000 of subsidiary silver with a face value some fifty per cent in excess of its bullion value, together with a small quantity of minor coins of aluminum, clean and light.

It had been observed by economists, some of whom held positions of importance with the Government in Utopia, that only one of the various functions of money — namely, that of serving as a medium of exchange — required the enormous quantity of \$1,000,000,000 of money to be in circulation or locked up in the Treasury, an amount representing at the time about four per cent of the total capital — that is, man-made producers' goods — of the country. The economists pointed out that this \$1,000,000,000 in metallic money, although apparently essential to commerce and industry, did not actually in a physical way aid in the production of more goods, as tools, machinery, and factory buildings, and the like assist in production. Neither did it satisfy wants in direct consumption, as do consumers' goods, such as bread, meat, and clothing. It merely passed from hand to hand in exchange for consumers' or producers' goods, and, in fact, appeared merely to be a sort of ticket made of gold or silver entitling its holder to useful goods, but having in itself, as coin, no want-satisfying power or powers of production.

The question was then raised, Why would not pieces of paper with denominations printed upon them serve the same purpose that the

metallic circulating medium served? The answer was that the pieces of paper would serve just as well as the pieces of gold and silver, provided only that everyone could be convinced that if he accepted this kind of money for goods or services sold, he would have no trouble in passing it on at the same rate for goods and services he wanted to buy. It was then pointed out by the more advanced monetary theorists among the Utopians that pieces of paper were already widely in use as money — namely, the gold certificates, and bank checks, which were extensively used (at that time bank notes had not come into use in Utopia), and it was a fair question to ask, Why, if the people were willing to accept such pieces of paper as money in part of their transactions, would they not accept similar pieces of paper for all their transactions?

To this the less advanced theorists replied that the gold certificates were accepted in trade because they were warehouse receipts representing their face value in gold in the Treasury — they were not merely pieces of paper at all, but claim checks on the gold in the Treasury. If the gold should be disposed of, the people would throw the certificates away, as worthless pieces of paper, just as a man would throw away a check on a hatstand in which he had checked his hat if the hatstand were destroyed by fire. Similarly, the bank checks represented claims to deposits in the banks, which the banks always honored (in Utopia) because they retained on hand sufficient gold reserves at all times to do so. At this the more advanced theorists grew somewhat impatient and averred that apparently the opponents had embraced the commodity theory of the value of money, which holds that the value of money in a gold-standard country depends upon the value of gold as a commodity, whereas the true theory of value of money is the quantity theory represented by the formula, $MV + M'V' = PT$.

Thereupon they explained in great detail the quantity theory of money to the orthodox theorists, who were, in fact, thoroughly conversant with it before. Since this theory is sound, they held, the primary consideration was not what the money was made of, but how much of it there was. If, therefore, the Government would call in all the gold money and gold certificates in circulation and substitute for them an equal amount of government credit money, the new paper money would be worth just as much as the old money, dollar for dollar, and no one would hesitate to accept it in trade at that valuation. It would circulate just as readily as gold. And, they added, if there should be some who doubted its value, these doubting Thomases could be taken care of by means of a moderate gold reserve carried in the Treasury for the

purpose of redeeming any of the credit money presented for redemption. This, they pointed out, would be doing by the Government much the same sort of thing which the banks were doing already — the government gold reserve would be like the banks' cash reserves against deposits.

3. FINDING A BETTER USE FOR GOLD

At this point in the discussion a somewhat befuddled listener asked what would be the good of all this if the Government did substitute paper money for gold money, and called in the gold. What would it do with the gold? To this there was a ready answer. Most of the gold, some \$800,000,000, after setting aside about \$100,000,000 to be retained temporarily as a gold reserve until everyone had been convinced that no gold reserve was necessary, could be exported to less advanced gold standard countries which would be glad to exchange for it useful goods and services. Care would need to be exercised in deciding upon what sort of goods or services to import, lest injury be done to some domestic industry, but, through the honesty and intelligence of the Government and the common-sense of the people of Utopia, the matter could be satisfactorily arranged. One suggestion was that, since the Utopians had long desired a system of paved highways, but had never felt able to bear the burden of taxation that the construction of such a system would require, the gold might be exchanged in foreign countries for all the labor, materials, and equipment necessary to build the highways, including all the current supplies of the imported workmen. No domestic industry and no class of workers would thus be affected. When the roads were completed, the foreign contingent would return home bag and baggage, and everything would be as before except that the Utopians would have some twenty thousand miles of splendid paved highways that they had not had before and would be rid of their useless gold.

The befuddled listener, not yet quite relieved of his befuddlement, inquired further how the Government could call in the gold. Would people voluntarily exchange their gold for credit money? It was explained that this matter could readily be arranged by the Government requiring taxes to be paid in gold and meeting expenses by issuing the credit money. Since the annual revenues and expenditures exceeded the amount of gold to be called in and paper money to be issued, the substitution of paper for gold could thus be effected in less than one year.

It should be noted that in Utopia the advanced monetary theorists were urging the substitution of paper money for gold, not for the purpose

of causing a rise in prices by issuing cheap money and plenty of it in the place of good money, but for the purpose of freeing Utopia's investment in gold and substituting therefor the more useful investment, as they perceived it, in good roads.

4. THE UTOPIAN CONGRESS PROVIDES FOR A MODERATE ISSUE

The conservative theorists admitted that the scheme had its attractions, provided it worked, and twenty thousand miles of paved highways without cost to the taxpayers represented a gift not lightly to be rejected. But they doubted that the formula, $MV + M'V' = PT$, really proved that the plan would work. They conceded that, with the quantity of money unchanged, the quantity of bank credit and the velocity of circulation unchanged, and with the quantity of goods and services sold for money the same as before, prices and the value of money per unit must be the same as before, even though paper money had been substituted for gold. But they wondered if, even in Utopia, there would not be many people who lacked faith enough in the new kind of money to accept it freely in exchange for goods and services.

There might be so many doubting Thomases presenting the paper money for redemption at the Treasury that after the surplus gold had been exported, the Treasury would not have enough gold to maintain redemption. In this case many people would refuse the money in exchange for goods and services, and in the absence of better money would resort to trade by barter. Expressed in the terms of the equation of exchange, T , or goods and services traded for money, would decline, and consequently P , the average level of prices, would have to rise; or, in other words, the value of the money per unit would fall. When the paper money began to depreciate, confidence in it would decline further, causing more people to refuse to accept it, and this would hasten its further depreciation. This depreciation in the value of the paper money, now the sole reserves of the banks, would shatter confidence also in the banks, and bank checks would tend to become boycotted or accepted only at greatly depreciated values. With the value of this money badly depreciated, while its quantity remained unchanged, trade of necessity would be largely conducted by barter and sadly handicapped. These more orthodox monetary theorists, while conceding a great deal of validity to the quantity theory of money, holding, in fact, views about the same as the conclusions stated in our Chapter IV, rejected the idea that mere scarcity of the pieces of paper with the government stamp upon them would maintain their value in the absence of the power of the Government to redeem them in gold upon demand.

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While they refused, therefore, to support a plan involving the almost complete expulsion of gold money, they agreed that a moderate quantity of credit money could apparently be issued to take the place of part of the gold with substantial advantages to the country as a whole. The final result of the debate was that the Congress of Utopia passed a law providing for the issue of \$100,000,000 of government credit money, redeemable in gold upon demand. The Secretary of the Treasury, while required to redeem the notes on demand, was also required to pay them out into circulation again as fast as redeemed, so that practically the whole amount would remain outstanding in circulation.

5. INFLATIONISTS AT WORK IN UTOPIA

We have already adverted to the fact that all things were not so perfect in Utopia as the fulsome laudation of that country by its early historian, Sir Thomas More, had led many people to believe, and it now becomes our unhappy duty to point out a few unpleasant facts in support of this assertion. As soon as serious consideration had been given to the issue of a moderate amount of government credit money as an economical substitute for part of the gold money of the country, certain economic illiterates took hold of the project and sought to make of it a device for inflating the currency. The inflationists had a considerable representation in the Congress, although, in Utopia, they never had a majority, and they hoped to be able to pass the Inflation Substitute Bill in the place of the Economists' Credit-Money Bill, which was finally enacted into law.

The Inflation Bill was considered and debated in two forms. The first form represented a proposal that the Government — the budget in Utopia having always been balanced — should increase its expenditures by the amount of \$80,000,000, without increasing taxation. To cover the \$80,000,000 deficit, \$80,000,000 in credit money would be issued, and an additional \$20,000,000 of credit money would be issued in the place of \$20,000,000 in gold which would be retained in the Treasury as a 20 per cent reserve against the total amount of \$100,000,000 of paper money, instead of being used to defray ordinary expenses of the Government. It is obvious that this would have resulted in a net increase in the amount of money in circulation of \$80,000,000.

The other proposal of the inflationists was quite similar. It was that the Government, without reducing expenditures, should reduce taxation by \$80,000,000, and cover the deficit by paying out \$80,000,000 in the paper money, the other \$20,000,000 in paper to be paid out in place of the \$20,000,000 in gold reserved for redemption.

These proposals were supported by the usual fallacious arguments; for example:

1. By the first proposal the people would obtain the benefits flowing from \$80,000,000 of additional public expenditures for parks, playgrounds, roads, bridges, or what not, and without cost in additional taxation.

2. By the second proposal the people would be saved \$80,000,000 in taxes without suffering any curtailment of services rendered by the Government.

3. By either proposal the country would be made richer by \$80,000,000, the net amount of the additional money placed in circulation.

4. By either proposal the people would gain, in addition, the "incalculable benefits" resulting from the stimulation of business by the extra \$80,000,000 placed in circulation, which, passing from hand to hand again and again, would multiply itself many fold in the course of a year, adding, not merely \$80,000,000, but many hundreds of millions to the incomes of the people. Wage-earners, farmers, business men — all would feel its blessings.

5. The greater abundance of money would make it easier to borrow and easier to pay; bank reserves would be replenished, interest rates would decline, and wages and prices would rise.

Even in Utopia these arguments were advanced! But in Utopia they were recognized as in part fallacious and in part self-contradictory, and wholly without validity.

6. THE FALLACIES EXPOSED

Consider now the reasoning by means of which the economists in Utopia were quickly able to expose the fallacious and self-contradictory nature of the arguments of the inflationists, and thus to prevent mischievous legislation.

Suppose, they said, that the Government does remit taxes to the amount of \$80,000,000, without decreasing expenditures at all. Without question the taxpayers will then be better off by that amount, and if there is no offsetting loss, the country as a whole will have gained \$80,000,000. At first sight no offsetting loss appears; although the taxpayers have more money than they otherwise would have, no one else has any less. Even though some persons have received from the Government only paper money instead of gold, the paper is as good as gold so long as it remains redeemable in gold. The total amount of wealth in producers' and consumers' goods — the product of the combined powers of production of all the land, labor, capital and management

of the country — may be assumed to remain unchanged by the issue of the paper currency. Whether or not the issue of the additional money has increased the total wealth of the country depends, then, upon whether additional money represents additional wealth. And here we have the solution of the problem.

Additional money, unless it be used in foreign trade, does not represent *additional wealth, for money is of that peculiar nature that no matter* how much of it the country has, the total value (and wealth is measured in terms of value) remains the same, for its value varies inversely and proportionately with its quantity. If, therefore, the taxpayers have more of it than they otherwise would have, and no one else has any less, it does not follow that the taxpayers have more wealth than before while everyone else has no less than before. The truth is that if the taxpayers have more money than before while others have the same amount as before, then the taxpayers have a larger proportion of all the money and others have a smaller proportion than before, and the value of the whole amount not having changed, the taxpayers now have more wealth than before and others have less by the same amount. There is no net gain on balance. This conclusion would not be changed by the consideration that the taxpayers and the general public cannot be distinguished from one another — being the same general body of people. In that case all combined have more money, but not more wealth than before. Nor would it be changed by the fact that the taxpayers, although not exactly the same body of persons as the general public, have not retained the \$80,000,000 of extra money, but have spent it. In that case, having once had it, they have added proportionately to their supply of wealth in other forms, while others have had their wealth correspondingly reduced.

Once in circulation the larger quantity of money, passing from hand to hand in the course of trade, together with the bank credit based upon it, permits all goods and services produced to be bought and sold at higher prices, but does not by any virtue of its own increase the quantity of goods and services available for purposes of consumption or further production. There should be admitted, of course, the possibility that the rise in prices generated by the increase in the amount of money in circulation may stimulate business and set in motion land, labor, capital and management which have been idle, and by thus temporarily increasing production increase the total amount of wealth in the country. While admitting this possibility, it must be observed that this method of stimulating industry is of the same type as the drink of whiskey which the drunkard considers requisite to stimulate him. Idle land, labor,

capital and management are ordinarily not the result of lack of money, but of more fundamental causes which cannot be eradicated by artificial stimulants, even though the stimulants have a temporary potency. Any gain that comes from this source is quite likely to be more than offset by the resulting reaction, as economic history abundantly teaches.

By this rather laborious reasoning the Utopian economists exposed the fallacy that more money means more wealth and convinced the Congress of the errors of the inflationists. Their task was made the easier doubtless by the fact that in Utopia it was obvious to a large proportion of the people that there are no magic powers in a government printing press by virtue of which bread and meat and fine raiment, radios, and limousines are broadcast over the land. Outside of Utopia, however, people do keep on insisting that prosperity-producing magic plays like a halo around the government printing press, reducing taxes, lubricating the wheels of industry, and saturating the land with every conceivable object of enjoyment so that even the humblest citizen may live like a prince.

Having given the general nature of the reasoning by means of which the economists in Utopia convinced the people that more money does not mean more wealth, it is hardly necessary to follow in detail the additional arguments they presented to complete their case against inflation as a substitute for hard work. It will suffice to note that the reasoning they used to show that the paper-money inflation to finance an expansion in public works, to make debts easier to pay, wages higher, business more prosperous, money more easy to borrow, and so on, could not accomplish all these things and would do more harm than good, was quite similar to that presented in various earlier chapters of this book where these topics have been discussed.

7. INFLATION AND FOREIGN TRADE

In Utopia, it should now be noted, the economists were not merely intent upon proving a point and to show themselves to be in the right while others were wrong, but eager to disclose the truth as well as the fallacy concealed in every economic doctrine. They proceeded, therefore, to point out that, while every argument advanced by the inflationists in support of their project for inflation of the currency was either fallacious or in contradiction of other arguments advanced, or both, nevertheless, wholly unsuspected by the muddle-headed protagonists of inflation, their scheme embodied within itself certain virtues which would eventually and in a roundabout way accomplish the very results which the economists themselves hoped to achieve more quickly, di-

rectly, and advantageously by their own bill. Thereupon, to the astonishment and doubtless to the complete bewilderment of the general public, they laid down the following doctrine relating to international trade:

If the Inflation Bill should become a law, and the amount of money in circulation in Utopia should consequently be increased 8 per cent, prices in Utopia would tend to rise 8 per cent. If at the same time, as might reasonably be assumed, no such inflation had occurred in other countries, and prices there had remained approximately the same as before, Utopia would now be a better country in which to sell and a worse country in which to buy than formerly, because buyers naturally desire to buy in the cheapest market and sellers to sell in the dearest market. Imports would tend to increase and exports would tend to decline, with the result that the even balance of trade which had existed would be upset, and an unfavorable balance of trade would arise, which would have to be settled by the export of gold, the only money generally acceptable in settling international trade balances. The only way to avoid this gold payment would be to let the balance remain unpaid and thus to accumulate foreign debts, which had never been done in Utopia.

So long as the relatively higher level of prices persisted in Utopia, so long would the net import of goods and the net export of gold continue. But these net exports of gold would be tending all the while to restore the previous relation of prices in Utopia and other countries. This is true because the exports of gold from Utopia would be tending to reduce the quantity of money in Utopia and to reduce prices there, while they would be tending to increase the money supply of other countries and to raise prices there. Eventually prices within and without Utopia would attain a new equilibrium and the net exports of gold would come to an end. Since before the issue of the extra money in Utopia, Utopia had about one fifteenth as much money in circulation as the rest of the world, or one sixteenth of the total world supply, the new equilibrium would tend to be established when fifteen sixteenths of the additional money had been exported, or \$75,000,000 out of the total additional amount of \$80,000,000 originally placed in circulation.

Here we come to the main point. While the additional money placed in circulation would be paper, the money exported would be gold. As a result of the export of this \$75,000,000 in gold, the Utopians would have been able either to import \$75,000,000 more of foreign-made goods, or to retain for themselves \$75,000,000 more of their home-made goods than they otherwise would have been able to do, or to have enjoyed an equal advantage arising from a smaller increase in imports combined

with a smaller decrease in exports. In other words, by this process the Utopians through the ordinary channels of trade, would have been enabled to trade \$75,000,000 of their gold to the rest of the world for \$75,000,000 worth of useful goods or services, and if the paper money placed in circulation in Utopia then performed the function of money just as well as it would have been performed by the exported gold, there would have accrued to the people as a whole a net gain of \$75,000,000. That it would perform this service as well as gold there could be but little doubt. After the completion of this whole process, there would be in circulation in Utopia \$805,000,000 in gold or gold certificates, \$100,000,000 in subsidiary silver, and \$100,000,000 in credit money, and in addition the negligible quantity of minor coins of aluminum. The figure of \$805,000,000 in gold or gold certificates is arrived at as follows: of the \$900,000,000 originally in circulation, \$20,000,000 would have been set aside as a special redemption fund in the Treasury, and \$75,000,000 would have been expelled in foreign trade, leaving the balance as stated. With the total gold stocks amounting to more than eight times the total outstanding credit money, and with comparatively little overvalued silver in circulation, and all this actually required for small change, the gold standard would easily be maintained and the credit money beyond a doubt maintained at par by prompt redemption, so long as the government budget remained balanced.

But, the economists continued, while a net gain would thus be theoretically possible from such an issue of paper money and inflation of the currency, the rise in prices following upon the issue of the money and the consequent fall in prices when gold began to be exported, together with the unavoidable inflation and subsequent deflation of bank credit that accompanies inflation and deflation of the currency, would produce such serious economic and financial disturbances, and would so upset the established relations between debtors and creditors, employers and employees, and in general between buyers and sellers and producers and consumers, that the whole theoretical net gain from the exchange of gold for other more useful goods and services would probably be more than counterbalanced by the losses resulting from these domestic economic dislocations and maladjustments which tend always to cause some classes to lose more than others gain.

8. THE UTOPIAN PLAN AS ADOPTED

The plan devised by the economists and actually put into practice in Utopia was as follows:

The Government, without either reducing taxation or increasing its

expenditures, proceeded to issue \$100,000,000 in credit money redeemable upon demand in gold. The money was placed in circulation by the simple device of paying it out in the place of that much gold, to meet the ordinary expenses of the Government. Thus, \$100,000,000 of gold revenue, which would otherwise have been expended, accumulated in the Treasury. Of this, \$20,000,000 was set aside as a special redemption fund for the credit money and \$80,000,000 was appropriated for the construction of paved highways, with the stipulation that all labor, materials, supplies, and equipment used in their construction should be purchased from foreign countries, to the end that no domestic industry and no class of domestic labor would be either injured or benefited by the construction of these roads. Thus two thousand miles of splendid paved roads were eventually constructed, the financing of which in any other way would not have been feasible, except by throwing very heavy burdens on the taxpayers. The foreign builders, with their laborers, their steam shovels, concrete mixers, and other paraphernalia, came and went, producing scarce a ripple on the sea of domestic industry, and leaving scarce a trace of their operations save the broad ribbons of concrete and sturdy bridges which remain a monument to this wise piece of legislation to this day.

It is probable that in no country except Utopia could such a project be considered without arousing such great opposition by business men and labor unions and narrow-minded professional patriots as to preclude its successful completion, and even in Utopia there was such an outcry from the cement producers, the steam-shovel manufacturers, and the labor leaders that bloody revolution seemed impending when the bill providing for the construction of the roads exclusively by foreigners was finally passed. In Utopia, however, common-sense prevailed, and the Congressmen who voted for the bill were not burned in effigy nor even defeated at the next election. Even the interested manufacturers admitted, when their propaganda had failed of its purpose, that, while they had gained nothing from the construction of these highways except their share as part of the general public in the benefits of these splendid roads, they had likewise lost nothing. The usual number of miles of roads built at taxpayers' expense was constructed during the time the specially financed project was under way.

9. INTERNATIONALLY MINDED INTELLECTUALS IN UTOPIA RAISE SOME QUESTIONS

While the Utopian economists and inflationists were debating their rival schemes for issuing credit money, certain internationally minded

intellectuals were constantly interrupting the debate with troublesome questions directed impartially at both parties to the contest. In Utopia these internationally minded intellectuals were not only tolerated, but even at times listened to with respectful attention, in marked contrast to the attitude assumed toward their fellows in most other countries. While it must be admitted that much of their talk was mere clap-trap with no better purpose than to keep some of these gentry in the public eye, four of their questions were considered by the economists as worthy of careful attention. These questions were as follows:

1. If the plan proposed by the economists were applied in practice, and Utopia thereby foisted upon the rest of the world \$80,000,000 worth of gold which would be quite useless to the other countries, since it would do nothing for them except raise prices, and received in exchange \$80,000,000 of really desirable goods and services, would not Utopia be gaining \$80,000,000 worth of goods and services in an unworthy way?

2. Might not other nations, when they had discovered the craftiness of the operation by which they had been hoodwinked, retaliate by similarly issuing paper money and thus force back their gold upon the Utopians in exchange for useful goods, to their detriment?

3. If other nations did likewise issue paper money in about the same proportion as Utopia, would it not follow that no nation would reap net gain — the result being merely temporary price disturbances and shipping of gold back and forth, to the detriment of all the countries concerned?

4. If other nations, taking their cue from Utopia, issued, not merely relatively as much paper money as Utopia, but more, would not more gold be forced back upon Utopia than the amount originally exported, and would not the Utopians, losing thus more useful goods and services than they had gained, be hoist with their own petard?

The economists answered these questions in the following manner:

While it might seem from a purely abstract point of view that the Utopians would be taking an unworthy advantage of the rest of the world by unloading upon it a large quantity of gold, which would probably serve no useful purpose, in exchange for useful goods and services, it should be remembered that most of the other countries had always considered gold the supremely desirable commodity to be esteemed above all others, and no sort of legislation had ever been more popular outside Utopia than laws designed to increase gold imports and discourage gold exports, while at the same time they encouraged exports and discouraged imports of useful goods and services. The economists' plan could, therefore, not be said to represent a scheme for

taking an unworthy advantage of other countries, since it would merely expedite the flow of gold into, and the flow of useful goods and services out of, these countries, which they considered a supremely satisfactory state of affairs.

If other countries should become aware of the absurdity of their point of view, and should issue paper money in about the same proportion as Utopia, so that no net export of gold would take place as a result of the issue of credit money, Utopia would gain no advantage at the expense of other countries, and if the issue of paper money in the various countries were made at different times, there would result a series of disturbing price fluctuations in all countries, and an uneconomic shipping of gold back and forth, which would be detrimental to all countries concerned. If the other countries finally issued more paper money, proportionately, than Utopia, more gold would flow back to Utopia than had been exported, and a net loss would be suffered in the form of a net export of useful goods and services.

It would not follow that the world as a whole could reap no net gain from the issue of all this credit money. If all countries issued more money, the world price-level would rise and the value of gold would fall. This would mean, not only that an ounce of gold would buy fewer goods and services than before, but that many low-grade gold mines would no longer be operated because the cost of the goods and services required to operate them would be greater than the value of the gold produced from them. Moreover, prospecting for new gold mines would diminish, and as a result less labor and capital would be devoted to the production of gold, and more labor and capital would consequently be available for the production of other more useful things.

This argument in favor of the issue of government credit money on a world-wide scale, the economists added, should be carefully considered, since from a superficial notion concerning the economy in the use of gold thus indicated, gross fallacies abound. The economy in the use of gold, for example, is not to be measured by the amount of paper money issued, so that the issue of say, \$1,000,000,000 in paper money, by all the nations of the world in the aggregate, would save the use, and the expense of production, of \$1,000,000,000 in gold. The economy in the use of gold would be much less, possibly not a tenth of this amount. The economy would come about, primarily as already indicated, through a rise in prices when the paper money was issued and a consequent gradual decline in the production of gold over a period of years. Moreover, the economists added, a world-wide movement toward the issue of government credit money, not controlled by international agreements as to

the amount issued, would result in irregularities, hit-and-miss exports and imports of gold, with wild inflation in some countries resulting in the total expulsion of their gold, and on the whole would cause so much financial and economic disturbance as more than to offset, in all probability, any economy in the use of gold arising therefrom.

In conclusion the economists admitted to the internationally minded intellectuals that Utopia might be setting a bad example for other countries, and the results might not be desirable if this example were followed. But they were content to assume the risks of their venture because other nations were not in the habit of moulding their affairs, financial or otherwise, on Utopian patterns. And in making this final remark the Utopian economists were quite correct. Rarely, if ever, has government credit money been issued outside of Utopia on the basis of such sound theory and for such a legitimate purpose as that represented by the Utopian plan just discussed.

10. THE MOST COMMON REASONS FOR ISSUING CREDIT MONEY OUTSIDE OF UTOPIA

In considering the reasons for issuing government credit money in countries other than Utopia, we may begin by observing that governments can obtain funds in any considerable quantity in only three ways: by taxation, which is the best way; by borrowing, which is the second-best way; and by the issue of credit money, by all odds the worst way. It follows that a strong government, composed of intelligent and well-meaning men, will not in all probability resort to the issue of credit money to meet current expenses, except in extraordinary emergencies, but will use instead the better methods of taxation and loans. But in time of war, when the financial resources of the country are strained to the utmost, even a strong and intelligent government may resort to government paper money, if by so doing it can obtain more promptly the purchasing power required to conduct its war activities than by resort only to taxation and loans. It should be added here, however, that there is much doubt on this point. It is by no means certain that a strong and intelligent government can wage a war even as effectively, let alone more effectively, by issuing paper money as by sticking to taxation and bond issues and avoiding inflation of the currency.

Weak governments will resort readily to the issue of credit money under various circumstances. A weak autocracy, fearing revolution, may strive to restrain hostility toward it by avoiding taxation through the issue of paper money. A democratic government, fearful of being voted out of office, may issue paper money, not merely to avoid the

hostility of taxpayers, but to curry favor with the inflationist element, which is often active and vociferous in a democracy. The inflationist element is likely to be particularly strong in a new country poor in capital and rich in debtors, and consequently suffering from an apparent scarcity of money. In such a country the demand for inflation becomes almost irresistible during the recurrent periods of depression. Finally, revolutionary governments, not yet firmly established, but fighting for their existence against the old established order, are likely to issue paper money, since they find it extraordinarily difficult to raise substantial sums either by taxation or by loans. Such revolutionary governments have not had time to develop the efficient administration of taxation. and, as for loans, they can offer no adequate security, since so long as the revolutionary government is not firmly established, it is nothing more than a band of rebels, who may be defeated, captured, and possibly executed. Under such conditions the issue of paper money may be the only feasible way of financing the war. Followers of the revolutionary government will accept such money in payment for goods and services, even though redemption in gold appears remote and doubtful, as a means of supporting their cause, and others may have it forced upon them by threats of being despoiled of their goods with no pay at all if they refuse to accept it.

With these generalities we may close our chapter on the issue of credit money in Utopia. In the following chapter we shall see how the credit-money experience of the United States, the Revolutionary Government, and the thirteen colonies differed in various ways from the experience of Utopia.

CHAPTER IX

GOVERNMENT CREDIT MONEY IN THE UNITED STATES

1. THE CREDIT MONEY OF THE COLONIES¹

THE credit money of the Colonies was issued in two more or less distinct forms for two distinct purposes. The first type was that of the "public bills of credit" issued for the purpose of paying government expenses in excess of current revenue. More or less prompt redemption of these bills was usually promised at the time of issue — the means of redemption being anticipated tax receipts. The second type of credit money was that of the "loan bill" issued as loans to influential citizens of the colonies or to the general public. These loan bills were secured by a pledge of property, usually real estate, of the borrower, and were to be repaid with interest, so that the conditions of issue promised to provide ample means for redemption.

Authorities seem to agree that Massachusetts was the first of the thirteen Colonies to issue public bills of credit and one of the first to issue loan bills. At first these bills tended to be issued in moderation and some issues were redeemed according to the promises made. But as the other Colonies followed the example of Massachusetts of creating money, and apparently wealth, by the easy process of the printing press, and the total quantity of the credit money in circulation rose, the metallic money that existed in the Colonies tended to be driven out of circulation, so that redemption became doubly difficult, the colonial Governments being able to obtain smaller and smaller quantities of coin with which to redeem larger and larger quantities of credit money. The Governments losing both the desire and the ability to redeem the notes in silver and issuing increasing quantities of them, they naturally depreciated in value.

It should be observed that the depreciation in the value of the credit money was the result of two closely related causes. First, the very fact of overissue of the notes to an amount greater than the quantity of money previously in circulation would have caused a rise in prices, not only in terms of the paper money, but also in terms of the silver money, so long as it remained in circulation and the paper money remained redeemable in silver. When redemption in silver ceased through lack

¹ This section is based in part on Chapter IV of Bullock, *Monetary History of the United States*. By permission of The Macmillan Company, publishers.

of desire and power of the Governments to redeem, the paper money depreciated in terms of silver as well as in terms of other commodities. When silver and gold money rose to a premium in terms of paper, they were expelled from circulation in accordance with Gresham's Law, and prices thereafter were quoted in terms of paper money, and tended to vary with the quantity of the paper money in circulation and its acceptability in exchange for commodities.

If the people continued to accept the paper money freely in exchange for goods and services, even though it was no longer redeemable in coin, it would tend to depreciate, in accordance with the quantity theory of money inversely and proportionally with its increase in quantity. That is to say, prices would tend to rise directly in proportion to the increase in the quantity of the credit money. If, however, this rate of depreciation in the paper, its lack of redeemability in coin, and the expectation that it would be multiplied in quantity shattered confidence in it, and people began to refuse to accept it freely in exchange, it would depreciate more rapidly in value than it increased in quantity, and as a consequence there might appear to be a scarcity of money which might then be made the excuse for even a larger issue.

About the best that can be said of the credit-money issues in the Colonies is that the results were not so bad in all as in some of them. Rhode Island seems to have been a more severe offender in this matter against common-sense and decency than Connecticut, and Connecticut worse than Massachusetts. But the record was bad enough in all of them, and it ran somewhat as follows:

1 Dates of redemption, if fixed, were postponed. If old notes were redeemed, they were often paid out again by the colonial Governments as being an easier way of paying bills than collecting taxes. When depreciation became pronounced, the old notes would be redeemed, not in coin, but in new notes referred to as "new tenor" to distinguish them from the "old tenor" notes. When the new tenor in turn became badly depreciated, it would be redeemed in a newer tenor, and would itself become a "middle tenor." Since these different tenors had their relative values fixed by the colonial Governments at the time of issue of the newest tenor, the legislatures felt called upon to maintain by statute a legal ratio between the values of various tenors concurrently in circulation.

The fact that the legislatures fixed legal ratios between the various tenors implies that the various issues of credit money had been given legal-tender powers. In some cases the legal-tender power was conferred upon the notes in plain language, and in others they were, in

effect, made legal tender, but not in unmistakable terms. But whether made legal tender or not they were usually by some means given a forced circulation. Fines, confiscation, and imprisonment were included among the penalties imposed upon unpatriotic citizens who discriminated against the paper money of the Colonies by demanding payment in specie. But neither legal-tender provisions nor penalties visited upon those who expressed a preference for specie could prevent the paper money from depreciating in value, both in terms of coin and in terms of other commodities as the quantity issued prodigiously increased. Since the rate of depreciation tended to be greater than the rate of increase in quantity, and since the poor remained poor despite the flood of money, there tended to be an insistent complaint of scarcity of money, and a clamor for larger issues; a clamor the Government was glad to heed, for with mounting expenditures it required greater issues to pay its way, unless it was to resort to such unpopular measures as increasing taxes or contracting interest-bearing loans.

It should not be supposed that there was in the Colonies no opposition to the mounting issues of paper money. While the debtors and the speculators in real estate and commodities — the time had not yet come for speculation in stocks — gained from the inflation of the currency with its sky-rocketing prices, the process was disadvantageous and often disastrous to persons living on more or less fixed incomes. Moreover, it was observed by the more substantial class of merchants that the instability resulting from a demoralized currency was a factor disturbing to business, and even those who gained temporarily were likely to be ruined thereby in the end. The governors of the Colonies often opposed the issues of paper money, partly, no doubt, because they themselves were on fixed salaries, but also because they were intelligent enough to foresee the disastrous consequences of the paper-money folly.

But the debtor and inflationist party remained in the ascendancy during the greater part of the period from 1700 to the time of the Revolution, so that inflation and depreciating currency were the rule and sound monetary policies the exception. Finally, things got to such a pass that the mother country felt called upon to interfere, and in 1751 Parliament enacted a law forbidding any further issues of legal-tender bills of credit by the New England Colonies, extending this prohibition in 1764 to all the other Colonies.¹

While this interference in their affairs by England was in the best interests of the Colonies, it aroused great opposition among the majority

¹ Dewey. *Financial History of the United States*, p. 29. Longmans, Green and Company.

of the people, and was one of the causes acting to precipitate the Revolutionary War.

2. THE PAPER MONEY OF THE REVOLUTION¹

When the Revolutionary War broke out, the wisest method of meeting war expenses, if it had been politically feasible, would have been by taxation supplemented with loans. But, given the strong aversion of the colonists to the payment of taxes and their persistent inclination to embark upon the issue of paper money, it was inevitable as a practical matter that government paper money would be utilized to the utmost as a method of war finance. Even before the Continental Congress convened in May, 1775, some of the Colonies had already resorted to the issue of credit money, and all the rest followed suit. Doubtless they enjoyed their new freedom from the restricting acts of Parliament. Even if the members of the Continental Congress had seen the wisdom of avoiding, and had desired to avoid, the resort to paper money in financing the war, the Congress could not have gained the support of the people in a drastic program of taxation. Without undertaking to break any idols, the writer ventures to remark that the fathers of our country objected to taxation with, as well as without, representation.

Regardless of the inevitable evil results, the Continental Congress had to finance the war by the issue of paper money or finance it not at all, except for the limited funds that could be raised by war loans of a government without assured credit. It had no direct power of taxation, and what taxes it attempted to raise were levied in the form of requisitions upon the several states, which paid only reluctantly and only in part the sums requested. The total sums paid by the states amounted to only \$5,795,000. To this could be added the more substantial sum of \$19,416,000 in foreign and domestic loans, and something less than \$3,000,000 in miscellaneous receipts. The balance of the \$65,864,000 income of the Continental Treasury from 1775 to 1783, or \$37,800,000, was obtained by the issue of paper money. All these figures represent the specie value of the various items calculated, when paid in paper money, on the basis of the degree of depreciation of the Continental paper. The total actual issue of Continental bills alone exceeded the total income in terms of specie as given above, having amounted to more than \$241,000,000. The great difference between the specie value of this paper when issued and its face value measures the average depreciation of the various issues, but does not indicate the extreme depreciation

¹ The statistics in this section are from Dewey, *Financial History of the United States*. Longmans, Green and Company

of the bills toward the end of the period. At first depreciation was relatively slow, and then the issues yielded considerable income in terms of specie, but as larger and larger amounts were issued, the depreciation became increasingly rapid, until in 1781 the Continental credit money had become practically worthless.

In addition to the enormous issue of Continental bills there were various issues of credit money by the Colonies aggregating in excess of \$200,000,000. The total issue of state and Continental bills exceeded \$451,000,000. Since the population of the Colonies at the time was less than 4,000,000, this works out in excess of \$112 per capita. On the assumption that the value of money varies inversely and proportionally with its quantity, and that what it is made of or the confidence with which it is accepted has little to do with its value, a very severe depreciation would have been inevitable with this enormous expansion in quantity. Considering the general poverty of the country in real capital, the small size of the average real income, and the small physical volume of trade, this large volume of money must necessarily have meant high prices. Yet, even so, the quantity theory of money would not have indicated prices infinitely high and the value of the money per unit practically nil. Obviously, it was not the mere quantity of this money that made it worthless; it was the palpable fact that it would never be redeemed in coin, and that it represented nothing more substantial than scraps of paper which finally caused the people to esteem it on the basis of scraps of paper.

The extreme depreciation of the Continental bills does not, of course, reflect upon the truth of the equation of exchange, $MV + M'V' = PT$, but it does show that when excessive issues of paper money are placed in circulation, the factor T may decline, because people will hesitate to trade goods and services for scraps of paper at any price, and the decline in T may be a more important factor in the value of money, or the price-level P , than the increase in the factor M , the amount of money in circulation.

3. DENYING THE FACT OF DEPRECIATION

When the depreciation of the paper money was well under way and the telltale premium on silver had appeared, the Congress and the state officials refused publicly to recognize the facts. They believed, or professed to believe, that the value of gold and silver had been raised, not that the value of the paper money had fallen, a characteristic notion of governmental officials in general when the paper money they issue falls below parity with coin, and one need not go back farther in history than

1932 to find examples of this notion in countries departing from the gold standard. The Continental Congress, not having power to make legal tender its monetary offspring, as had the State Governments, had to rest content with trying to persuade the people that its bills were as good as gold by issuing public addresses. In September, 1778, for example, when depreciation was already far advanced, Congress issued an address containing the following passage:

We should pay an ill compliment to the understanding and honor of every true American, were we to adduce many arguments to show the baseness or bad policy of violating our national faith, or omitting to pursue the measures necessary to preserve it. A bankrupt, faithless republic would be a novelty [sic!] in the political world, and appear among reputable nations like a common prostitute among chaste and respectable matrons.... Apprised of these consequences, knowing the value of national character and impressed with a due sense of the immutable laws of justice and honor, it is impossible that America should think without horror of such an execrable deed.¹

Within a year, Congress, as Walker puts it, "swallowed all its brave words about public faith and the honor of republics," and publicly admitted a depreciation of paper in terms of silver of 40 to 1.² After that the depreciation went on more rapidly until, where the money still circulated, the ratio was 1000 to 1. When it became so near worthless that it was not worth the effort of the holder to try to pass it on, it was naturally retired without the painful process of redemption. Or, as Dr. Ramsey the historian expressed it gracefully in a much-quoted passage, "Like an aged man expiring by the decays of nature, without a sigh or groan, it gently fell asleep in the hands of its last possessors."

While Congress was attempting to maintain the value of its currency by persuasion, more stringent measures were elsewhere being applied. The states conferred legal-tender powers, not only on their own credit money, but also upon the Continental bills. Laws were also passed to repress the premium on silver and to restrain speculators from forestalling and engrossing the market in anticipation of continued inflation and rising prices. People who refused to accept the depreciating paper in exchange for goods and services were called traitors and enemies of liberty, and other choice names. Mob action was taken against the holders of goods, and merchants were fined and imprisoned. It was to the accompaniment of these developments that the credit money depreciated and prices rose. It was not exactly a soothing lullaby to the tune of which the Continental bills gently fell asleep in the hands of their last

¹ Quoted by Walker, *Money*, p. 331. Henry Holt and Company, 1891.

² Walker, *Money*, p. 332.

possessors, and the good Dr. Ramsey, with his flair for poetic expression, has perhaps given many persons an erroneous impression of quiet and decorum prevailing as the Continental credit money breathed its last.

4. THE EVILS AS PORTRAYED BY BULLOCK

The evils inseparable from such a paper-money orgy as that of the Revolution are graphically portrayed by Bullock, with the aid of quotations from men who had observed them at first hand, as follows:

The misery and iniquity wrought by the depreciating currency were beyond all description. The rise of prices encouraged the most demoralizing speculation, while the sudden acquisition of unearned and undeserved wealth by rascals and sharpers stimulated the most wanton and shameful extravagance. Washington has drawn a correct picture of the conditions, the cause of which he did not originally understand: "If I were to be called upon to draw a picture of the times and of men, from what I have seen, heard, and in part know, I should in one word say, that idleness, dissipation, and extravagance seem to have laid fast hold of most of them; that speculation, speculation, and an insatiable thirst for riches seem to have got the better of every other consideration, and almost every order of men;..." The paper money opened the door to the most shameful frauds upon all who were so unfortunate as to be in the position of creditors. Dishonest debtors were enabled to pay their debts in worthless currency. Witherspoon wrote, "For two or three years we constantly saw and were informed of creditors running away from their debtors, and the debtors pursuing them in triumph, and paying them without mercy." Many persons lost a large part or the whole of their fortunes. Guardians of trust funds were enabled to acquit themselves of their obligations by paying widows and orphans in paper that was worth only the smallest fraction of its nominal value.¹

5. THE CREDIT MONEY OF THE WAR OF 1812

Along with the many evils growing from the overissue of credit money by the Continental Congress and the states during the Revolutionary period there was generated one great good — such an abhorrence of the evils of paper money that when the Constitution was drafted a few years later, a provision was inserted denying to the States absolutely the right to issue bills of credit. Although there was a strong feeling among many of the framers of the Constitution that the Federal Government also should be denied the right to issue credit money, the Constitutional Convention took the milder course of simply omitting from the clause relating to money and coinage any mention of the power to emit bills of credit. The provisions of the Constitution relating to money and coinage are as follows:

¹ From Bullock, *Monetary History of the United States*, pp. 68-71. By permission of The Macmillan Company, publishers.

Art. 1, Sec. 8. The Congress shall have power... to borrow money on the credit of the United States... to coin money, regulate the value thereof, and of foreign coins.... Art. 1, Sec. 10. No State shall... coin money; emit bills of credit; make anything but gold and silver coin a legal tender in payment of debts; pass any... law impairing the obligation of contract.

In respect to the powers of Congress, the phrase "to emit bills of credit" was at one time inserted in the Constitution, but after much debate was stricken out. As a consequence of this action, it remained doubtful whether or not the framers of the Constitution intended that Congress should have the right to issue bills of credit. This doubt was later to be dissolved authoritatively by the Supreme Court of the United States in a decision holding the emission of legal-tender credit money to be constitutional.¹

The gist of the matter seems to be that the majority of the Constitutional Convention were opposed to the issue of credit money by the Federal Government, but hesitated to insert a clause specifically prohibiting its issue, for two reasons. First, and foremost, they considered such a clause inexpedient, since it might arouse so much opposition among the people that the Constitution would fail of ratification. Secondly, there might sometime in the future develop such an emergency that the power to issue credit money would be essential to the safety of the government.

As a result of the constitutional restrictions and the distaste influential citizens had acquired for government credit money during the Revolution, no credit money was issued either by the states or the Federal Government under the Constitution until the War of 1812. During this period the only paper money in circulation consisted of the notes of the comparatively few state banks and, during the years from 1791 to 1811, the notes of the First Bank of the United States, to be discussed in our chapters on banking. Gold and silver certificates had not at that time come into use.

Under the financial strains of the War of 1812, however, with the people still reluctant to pay adequate taxes and the credit of the Government so poor that loans could be floated only at a high rate of interest and often at a substantial discount below par, a sort of government credit money was issued. The Government did not make the plunge into the troubled waters of this makeshift financial policy wholeheartedly and with enthusiasm, but, on the contrary, rather gingerly, like a small boy afraid of cold water yet wanting to swim, thrusting in

¹ In the case of *Hepburn vs Griswold*, 8 Wall 603, decided in 1869. The case is reviewed *Hepburn, History of Coinage and Currency in the United States*, pp. 260-73.

first a toe, and then a foot, and finally with fearsome shivers gradually slinking in to get such enjoyment as possible out of a rather doubtful experiment. The type of money emitted at that time was referred to as the treasury note, the first issue being provided for by the Act of June 30, 1812. By subsequent acts four more issues were provided, and in all \$36,680,794 of the notes were issued.¹

The first issue was more in the nature of short-term government bonds than government credit money. The smallest denomination was \$100, and the notes were payable in one year with interest at the rate of 5.4 per cent. This peculiar rate of interest was so fixed that the interest on a hundred-dollar note would amount to just one and a half cents a day, one and a half cents being one three-hundred and sixtieth part of \$5.40. For the purpose of facilitating their use as money, the notes were made transferable by delivery and endorsement, and the rate of interest made it convenient to calculate the amount due to each successive holder. In the later issues the *minimum denomination* was dropped first to \$20, and finally to \$3. While the first four issues were made payable in one year, no date of redemption was set for the fifth and last issue. Finally, of the last issue, the notes below \$100 were made non-interest-bearing. These last-named notes were, therefore, nothing but government credit money, and could serve no other purpose than to circulate as such, unless they were presented at once in payment of government dues, for which they and all other issues were receivable. All they lacked to make them true brothers of the Continental bills were the legal-tender provisions and the unlimited issue, and these would doubtless have come in a short time had not the war fortunately come to an end before further emissions were required to finance it.

At first there was strong opposition to the issue of these treasury notes, but the opposition gradually grew weaker, and, in fact, there were extenuating circumstances which tended in some measure to justify their issue. After the charter of the First Bank of the United States had expired in 1811, state bank notes remained the only type of paper money in the country, and the state banks were so poorly supervised and managed that with the outbreak of the war many of them suspended specie payment and the currency fell into disorder. It could be urged with some show of reason that United States treasury notes, receivable everywhere for government dues, and thus indirectly guaranteed by the total revenue of the Government, would provide a most useful and relatively stable currency.

¹ These details concerning the paper money of the War of 1812 are from Dewey, *Financial History of the United States*, pp. 135-37. Longmans, Green and Company, 1931.

Nevertheless, it should be emphasized that Congress would have shown greater wisdom in providing the country with a productive tax system than in trusting to the makeshift expedient of financing a war in large part with bills of credit. It was only the fact that the War of 1812 was not a life-and-death struggle calling for enormous financial resources, but a rather short and relatively inexpensive war partaking in some respects of the nature of comic opera that saved the country from the natural and evil consequences of embarking upon such hazardous financial adventures. As it fortunately turned out the notes did not depreciate in terms of specie until the banks generally suspended specie payment in August, 1814; and for this suspension of specie payments by the banks, bad banking rather than government paper money was responsible. Even after suspension of specie payments by the banks, there was no extreme depreciation in either the bank notes of the better banks or the treasury notes. So the people were in large measure spared the injustice, speculation, fraud, and extravagance that regularly accompany a depreciating currency — spared not by the foresight and financial ability of the Government, but by the fortunate early termination of the war.

6. GREENBACKS, THE CREDIT MONEY OF THE CIVIL WAR

It remained for the financial emergencies of the Civil War to force upon the American people their first important experience with government credit money, under the Constitution. At the outbreak of the war the Government was faced by the usual questions confronting governments involved in serious wars — How should the war be financed? Of the three possible methods, taxation, loans, and emission of credit money, which should be used? The Civil War Government did not hesitate long in making its decision — it would use all three of these financial devices. Not only was credit money promptly issued, but Constitution or no Constitution, it was given legal-tender powers. The constitutionality of the issue of legal tenders was to be decided later under less trying conditions.

Whether or not taxes and loans would alone have sufficed to keep the Government in funds remains an unsettled question. No vigorous effort was made to finance the war without resort to credit money. The advocates of legal-tender financing fortified their lesser arguments with the supreme argument of military necessity, which in times of war overturns all opposition. Against the argument of necessity could be urged the facts that the North was rich and prosperous and the people willing to submit to heavy taxation in order quickly to win a popular war. On

the contrary, there were pointed out apparently insuperable obstacles in the way of financing solely by loans and taxation.

The banks had suspended specie payment in December, 1861, eight months after the war began. Gold and silver money ceased to circulate, having been exported or gone into hiding. There was no money with which to buy bonds or pay taxes except the unsatisfactory state bank notes, of which, according to Dewey, there were 7000 varieties in circulation, including the counterfeits. Compared with this heterogeneous mass of scraps of paper of uncertain value, legal-tender notes guaranteed by the United States Government would be a decided improvement. Government credit money with legal-tender powers would provide business with life-blood and give to taxpayers and investors the means of paying taxes and buying government bonds. Without credit money of this type, there would be neither taxes nor loans with which to finance the war. Obviously, these were strong arguments, but they advanced as a justification for emitting credit money the very suspension of specie payment which the Government itself, by its inept policies and its preliminary dabbling with credit money, had been largely instrumental in bringing about.

For the bad banking system the War Government itself is not to be blamed, since it was inherited from past administrations. By long-continued toleration of a banking system so bad that it was a disgrace to a civilized nation, the American people had placed themselves in a position where a breakdown in the financial machinery would be a grave menace in a time of emergency such as the Civil War. Yet suspension of specie payment apparently was not inevitable even with this unsound banking system; for this suspension the War Government itself may be blamed. The lack of a plan providing for drastic taxation impaired the confidence of investors in the financial strength of the Government, and made it difficult to sell bonds, either at home or abroad, even though an interest rate of 7 per cent was offered on twenty-year bonds. Lack of confidence caused hoarding of specie, thus reducing the specie reserve of the banks. On top of all this came the demand of the Secretary of the Treasury that the Boston, New York, and Philadelphia banks, which had agreed to buy \$150,000,000 worth of bonds, should pay for the bonds in specie, which was then to be withdrawn from circulation temporarily and locked up in the Treasury pending its gradual disbursement. Thus a double drain on the bank reserves was set in motion. As if this were not enough, Congress had authorized as early as July, 1861, three months after the outbreak of the war, the emission of non-interest-bearing treasury notes, payable to the bearer upon demand, in denominations rang-

ing from \$10 to \$50, to the amount of \$50,000,000. In August the minimum denomination of these demand notes was reduced by Act of Congress to \$5. When these notes were placed in circulation, they were carried to banks by depositors who might otherwise have brought coin, and who demanded the right to draw coin against the deposits so created. Although the banks could in turn demand of the Government that it redeem the notes in coin, they might at once be reissued and find their way again to the banks, thus at one and the same time reducing the amount of gold received by the banks and increasing the amount they were called upon to pay out. Probably the effect of these notes — which were nothing but government credit money, without legal-tender power — upon confidence was a more important factor in draining off bank reserves than their direct presentation at the banks.

For the inadequate plan of taxation, for the locking up of the specie of the country in the Treasury, and for the issue of these demand notes, harbingers of the swarm of greenbacks shortly to follow, the Government may be held directly responsible. For two other facts disturbing to confidence it was less directly responsible. These were, first, the fact that war expenditures far outran expectations, while revenue fell short of estimates, and second, the threat of war with England. It was a panic induced by all these circumstances combined that precipitated the suspension of specie payment, first by the banks, and then of necessity by the Government.

Thus reluctantly the Civil War Government was brought to the point of issuing legal-tender credit money largely as a direct result of its previous mistakes. Although the proposed issue of the legal tenders aroused strong opposition from some members of both houses of Congress, it obtained vigorous support from the inflationist and demagogic element, which could make an appeal to the instinctive hatred and distrust of bankers and money-lenders which has always been characteristic of a large proportion of the American people.

One argument much used to support the issue of paper money was the high rate of interest demanded by the bankers, who were variously referred to in Congressional debates as "brokers and hawkers on change, huckstering capitalists, harpies, and jobbers and money shavers."¹

"Shinning" by the Government through Wall Street, says Dewey, was vigorously condemned. Not only was high interest disapproved, but some patriots in the halls of Congress demanded to know why the Government, which was more powerful than all the capitalists, should pay 6 per cent to the capitalists for their money when it might make all

¹ Walker, *Money*, p. 373.

the money it needed for itself. Secretary Chase himself impeded the sale of bonds by refusing to sell 6 per cent bonds below par, by trying to hold down the rate of interest below the current rate on loans (which was later successfully accomplished by Secretary MeAdoo in the World War), and by refusing to offer to bond-buyers the speculative spur of distant maturities.

Once the decision was made to issue legal-tender credit money, Congress acted quickly in authorizing three separate issues of \$150,000,000 each, in February, 1862, July, 1862, and January, 1863. These United States notes, or greenbacks as they became popularly known, represented promises of the United States Government to pay to the bearer, but neither upon demand nor at any specified time. The understanding was that they would be redeemed in gold when the war emergency was over. They were non-interest-bearing, and were made lawful money and a legal tender in payment of all debts, public and private, within the United States, except duties on imports and interest on United States bonds and notes. The minimum denomination of the first issue was fixed at \$5, but in the next two issues it was lowered to \$1.

7. THE BOND CONVERSION FEATURE OF THE GREENBACKS¹

An interesting and important feature of the first and second issues of greenbacks was their convertibility into bonds. Not only were the notes made receivable the same as coin, at their par value, in payment for any bonds thereafter sold by the Secretary of the Treasury, but they were made redeemable in 6 per cent 5-20-year bonds of the United States, with interest payable semi-annually. This feature was expected to serve two useful purposes. First, the note-holders, when not in need of ready money, would exchange the greenbacks, which did not bear interest, for interest-bearing bonds. The Government, having received the notes for bonds in this way, would again place them in circulation, whereupon they would again fall into the hands of thrifty persons who would exchange them for bonds, and so on in a happy circle. Thus, the conversion feature would make the greenbacks automatic salesmen for government bonds. The second purpose that was expected to be served by this feature was to retard the tendency of the greenbacks to depreciate.

To clear up this second point we must consider briefly once more the quantity theory of money as represented by the equation of exchange, $MV + M'V' = PT$.

¹ This section is based in part on Dewey, *Financial History of the United States*, pp. 290-91. Longmans, Green and Company, 1931.

When paper money such as the greenbacks is issued, it cannot depreciate in value in terms of gold so long as it remains convertible into gold, but it will tend to depreciate, along with gold, in terms of commodities and services in general, as the total quantity of paper money plus the gold money in circulation increases. After suspension of specie payment, when gold and silver money have disappeared from circulation, the paper money will tend to depreciate in value in terms both of gold and commodities in general in proportion to its increase in quantity, or rather in proportion to the increase in quantity of all the money remaining in circulation, which, in the case of our greenbacks during the Civil War, consisted of the greenbacks and the bank notes, together with various forms of fractional currency. As previously indicated, it might be expected to depreciate at least as rapidly as the total quantity of money in circulation increased, and would probably depreciate even more rapidly if confidence in its ultimate redemption in gold began to wane. But the bond conversion privilege of the greenbacks might, at least theoretically, so retard depreciation that the rate of depreciation would be less than the rate of increase in the quantity of money in circulation. Consider why this might be true.

So long as the greenbacks remained convertible without restriction into 6 per cent bonds at par, they could of course not depreciate in value below the value of the bonds. But the Government had bound itself to continue paying the interest on the bonds semi-annually in gold. So long as this interest continued to be paid in gold when due, and so long as confidence in the ability of the Government ultimately to redeem the bonds in gold was not seriously impaired, the bonds might be expected to depreciate comparatively little below par. Their market value would depend, like that of any other bond, upon three factors — namely, the relation of the current rate of interest to the coupon rate, the date of maturity, and the degree of probability that they would be redeemed at par at maturity in gold. If the current rate of interest did not rise above the coupon rate of the bonds, and if confidence in ultimate redemption of the bonds remained unimpaired, the bonds would not depreciate in terms of gold, and consequently neither would the greenbacks.

But what would happen if, while the bonds remained near par in terms of gold, the greenbacks were multiplied to such a degree that the equation of exchange would call for a higher price-level in terms of the paper money, or, in other words, for depreciation? What if all the greenbacks in circulation could not be spent, at the normal velocity of circulation, for the available supply of goods and services at the existing price-

level? The answer seems to be that in such case the greenbacks would become redundant and be presented in large quantities for conversion into bonds. If the greenbacks were then promptly reissued by the Government to meet war expenses, the quantity of them in circulation would not be reduced, and the redundancy would continue to send them streaming into the Treasury for redemption in bonds. While this would not reduce the quantity that remained outstanding, it would tend to prevent the need for additional emissions, since the Government would be amply supplied with funds by issuing bonds in exchange for the greenbacks.

To sum up, it may be said that the bond conversion feature of the greenbacks tended automatically to check the overissue of the legal tenders, increased the demand for government bonds and thereby helped maintain their price, and prevented the depreciation in the value of the greenbacks from exceeding the depreciation in the value of the bonds. Even excessive issue of the greenbacks could not directly cause a depreciation in their value and a rise in price in proportion to their increase in quantity, but only indirectly by impairing confidence in the ultimate redemption in gold of the bonds in which they were redeemable.

While the process of maintaining the value of the greenbacks by their convertibility into bonds, and the value of the bonds by the demand for them in terms of greenbacks, may seem like boot-strap economics, nevertheless abstract reasoning indicates that it had considerable value, and many men at the time it was in operation believed it to be effective. Its limits, of course, would be reached when the quantity of bonds outstanding, and not merely the greenbacks, became so excessive that redemption in gold became improbable. Then the value of bonds and greenbacks alike would depreciate to a degree that measured the probabilities of redemption, which might or might not bear a close relation to the quantity of greenbacks in circulation.

Unfortunately, the probable usefulness of the plan was underrated by Secretary Chase and the last batch of legal tenders, issued in March, 1863, lacked this conversion feature and it was withdrawn from the earlier issues. The value of the greenbacks was thereby cut loose from the value of the bonds, and, like a parachute cut loose from its supporting balloon, the value of the greenbacks descended. The extent to which their value had really been maintained by the conversion privilege is probably not susceptible to even approximate statistical measurement, but the movement of prices and the premium on gold in terms of greenbacks seem to indicate that some support had been afforded to the value of the legal tenders by their convertibility into the six per cent gold bonds.

8. THE GREENBACKS AND THE QUANTITY THEORY OF MONEY

During the war period the depreciation and the fluctuation in value of the greenbacks were by no means exactly, and not even approximately, in proportion either to the quantity of greenbacks or the total quantity of money in circulation. From this bald statement it might be concluded that the quantity theory of money had little validity, but this conclusion would not be warranted, and would follow only from over-emphasis of one factor and underemphasis of other factors in the equation of exchange. Properly understood, it will be recalled, the quantity theory of money holds only that prices will tend to vary with the quantity of money in circulation, or will vary with the amount of money in circulation provided other things remain the same. During the Civil War these other things did not remain the same, but changed markedly from time to time.

Mitchell, in his authoritative study, *A History of the Greenbacks*, found that the fluctuations in the value of the greenbacks, as measured by the premium upon gold, were caused primarily by the following factors:

1. Increase in the amount of the greenbacks
2. Condition of the Treasury — gloomy or hopeful reports of the Secretary of the Treasury.
3. Ability of the Government to borrow — success of bond issues.
4. Changes in officials of the Treasury Department.
5. War news — good or bad.

Of these five factors only the first is directly concerned with the quantity of money in circulation — more greenbacks meant, of course, more money, unless the increase in the quantity of greenbacks was offset by a decrease in other kinds of money. The other four factors all center about the question of confidence in the Government and the probability of ultimate redemption of the greenbacks in gold. It remains to consider, then, if the factor of confidence can be fitted into the equation of exchange, and if so, which one of the six factors represented by $MV + M'V' = PT$ may reflect confidence in the currency.¹

Changes in the degree of confidence in the currency would affect primarily V , and also V' to the extent that bank credit was based on the greenbacks, and T . With increasing confidence in the early termination of the war, or of its successful financing by bonds, for example, fear of further increase in the issue of greenbacks and of a further rise in prices would diminish. In fact, expectation of an early termination

¹ It is assumed that the reader understands the significance of the terms in the equation, as explained in Chapter IV.

of the war would tend to cause a fear of falling prices when the war demand ceased. With increasing confidence, then, sellers of goods would be more eager to sell and would offer larger quantities of goods for sale in a given period of time than would be offered when confidence was diminishing. If buyers could be found for this larger quantity of goods, T , the physical volume of trade, would increase. On the contrary, with increasing confidence buyers would be less eager to buy in anticipation of a further rise in prices, and might even hold off in anticipation of a fall in prices. They would hoard their greenbacks, thus reducing the velocity of circulation, V . While the total amount of money in circulation would not be reduced thereby, the total quantity offered for goods and services in a given period of time would be reduced. If, then, the sellers who wanted to sell a larger quantity of goods during such period had to sell them for a smaller quantity of money in the aggregate, they would have to accept a reduction in price. On the other hand, a decrease in confidence would tend to cause the holders of goods to hoard them and the holders of greenbacks to hasten to spend them, and thus, by reducing T and increasing V , while M remained the same, force a rise in P , or the general level of prices.

It should perhaps be added, here, that the premium on gold measured the value of the greenbacks only in terms of gold, and did not accurately measure their value in terms of commodities in general, or the general level of prices, since the value of gold itself fluctuated during this period in terms of other commodities. But the five factors Mitchell names bore the same general relation to changes in greenback prices as to changes in the premium on gold.

A sufficiently marked change in confidence, then, affecting the velocity of circulation of money and the physical volume of trade might conceivably more than offset a contrary change in the quantity of money, so that prices might fall even while the quantity of money increased, or prices might rise while the quantity of money decreased. Such considerations might seem to leave the quantity theory of money sadly tattered and torn, although they saved the equation of exchange in a hale and hearty condition. But the following additional comments may be offered: In a broad way increasing the quantity of greenbacks in circulation tended to shatter confidence in ultimate redemption just as truly as defeats in the field of war and failure of bond issues to sell to good advantage, and at the same time such defeats and failures would themselves lead to further issues. Thus, in the long run confidence would tend to wane as the quantity of greenbacks would wax, and the two factors, confidence in redemption and quantity of greenbacks,

would operate to supplement one another and not to counteract one another.

During the war while the greenbacks retained the bond conversion privilege and while confidence in the successful outcome of the war and ultimate redemption of the greenbacks in gold was fairly strong, there was a tendency for the greenbacks to depreciate less rapidly than the rate of increase in the total quantity of money in circulation. On the other hand, when the Federal Government suffered severe defeats on the field of battle, the depreciation in the greenbacks outran the increase in the quantity of money. The best way, therefore, to measure the effect on prices of the increase in the quantity of money resulting from the issue of the greenbacks is to compare the price-level and the quantity of money in circulation before the outbreak of the war with the price-level and the quantity of money in circulation in 1866, when the war had ended and fear of further issues of greenbacks and probable repudiation had subsided, but when the value of the greenbacks was as yet not bolstered by the hope of early redemption in gold.

The quantity of money in circulation on June 30, 1860, was in round numbers \$435,000,000; and on June 30, 1866, \$940,000,000. The increase in the total quantity of money in circulation during these six years was 116 per cent. As against this increase of 116 per cent in the quantity of money, the all-commodity wholesale price index of Warren and Pearson (1910-14 = 100) shows an increase of from an average of 93 for the year 1860, to an average of 174 for the year 1866, an increase of 87 per cent.¹ An increase in prices of 87 per cent accompanying an increase in the quantity of money in circulation of 116 per cent, after making allowance for some increase in the physical volume of production during the six years, argues for a rather close relation between the quantity of money and prices. Prices, it seems, in the long run do tend to vary with the quantity of money in circulation.

9. THE GREENBACKS AFTER THE WAR

Before entering upon a discussion of the post-war history of the greenbacks, it should be noted that the three issues of greenbacks, amounting to \$450,000,000, authorized in 1862 and early in 1863, represented by no means all the legal-tender currency issued during the Civil War. The extreme depreciation of the greenbacks had not only expelled gold from circulation, but had driven from circulation also almost entirely the fractional silver coins as early as July, 1862. For a time there was no currency available in denominations between one cent and five dol-

¹ Warren and Pearson, *Prices*, p. 12 John Wiley and Sons, 1933

lars, the smallest size in which the greenbacks were originally issued. Retail trade was badly handicapped, and various private business organizations — hotels, saloons, retail stores — began to issue notes and tickets which circulated as money, and were called "shinplasters." Fractional bank notes also were issued, and postage stamps were used as currency. These developments led to an Act of Congress, in July, 1862, authorizing payment in postage stamps, and forbidding the issue by any private corporation, banking association, firm, or individual, of notes, checks, memoranda, tokens, or other obligations for a lesser sum than one dollar, intended to circulate as money.

The postage-stamp currency not proving satisfactory, Congress, in March, 1863, authorized the issue of not more than \$50,000,000 in fractional United States notes, which were in effect made legal tender. By the same act \$400,000,000 in interest-bearing treasury notes were authorized, in denominations of not less than \$10, and these were made legal tender for their face value, to the same extent as the greenbacks. Because these treasury notes bore interest, they did not circulate readily as money, but they were used as bank reserves, thus releasing a corresponding amount of greenbacks for active circulation. The total authorized amount of the fractional notes and the legal-tender interest-bearing treasury notes was not issued, but so many of these were issued that the total amount of legal tenders in existence amounted to \$675,000,000 by November, 1864. These, together with less than \$200,000,000 in state and national bank notes comprised practically all the currency of the country at the time. Gold and silver had disappeared from circulation except in California, where it is estimated that about \$25,000,000 in specie remained in circulation, as the result of a sort of general understanding that the legal tenders would not be tolerated as standard money, one of the most peculiar monetary phenomena in history.

As already indicated, the greenbacks proper were issued reluctantly by the Government as an emergency war measure in 1862 and 1863. They were not favored by the Secretary of the Treasury who had to place them in circulation, and many of the advocates of their issue defended the proposed action mainly on the grounds of financial necessity. Generally it seems to have been understood that the legal tenders would remain in circulation only temporarily, and would be retired at the earliest practicable time. It was inevitable, however, that with prices inflated through their issue in such large quantities, and with speculation rampant as always during a period of inflation, action looking toward the retirement of the greenbacks, involving of necessity some contraction of the currency and some shrinkage of prices, should produce a political

storm. Such a large part of our forward-looking people have always been in debt from looking forward too optimistically to rising prices of real estate and securities that deflation has always been most unpopular. Political conditions in the United States never favor deflation of the currency. When we have deflation, it comes, not from political action designed to produce it, but from collapse of bank credit as a natural result of excessive expansion. And so it happens that of the \$450,000,000 of the legal-tender greenbacks originally issued, \$346,681,000 remain outstanding to this day.

With minute details of the struggle, on the one hand, to retire the greenbacks, and on the other hand, to expand the issue indefinitely as a royal road to wealth, we need not concern ourselves here. It will suffice to say that immediately after the war, the North was prosperous, revenue rolled into the Federal Treasury easily and in large volume, and it would have been quite practicable to retire the entire non-interest-bearing debt represented by the greenbacks, as well as to make a beginning in retiring bonds. As a matter of fact, the Government did begin the process of retiring the greenbacks gradually until in 1868 the amount outstanding had been reduced to \$365,000,000. At this figure the process was halted by an Act of Congress suspending further reduction of the currency. This act represented a victory of the inflationist element within the Republican and Democratic Parties over the more conservative element who favored the payment of interest on government bonds in gold and the ultimate retirement of the greenbacks and the re-establishment of the gold standard. The inflationists now not only succeeded in temporarily halting the retirement of greenbacks, but managed to bring about a slight degree of expansion, and would have brought about more except for the veto of the so-called "Inflation Bill" by President Grant in 1874, this bill having fixed the maximum amount of greenbacks at \$400,000,000. In the same year the Republican Party, with a larger representation of sound-money men in it than the Democratic Party, was roundly defeated in the Congressional elections, but still controlled Congress in the short session after the election. Having nothing more to fear now from tempests of the prairie where the greenback storms raged, the sound-money men took advantage of this period of political immunity and passed the Resumption Act, which was promptly approved by President Grant.

This act provided for the gradual retirement of the greenbacks in excess of the amount of \$300,000,000, concurrently with the expansion of the circulation of national bank notes, and after January 1, 1879, for the redemption in coin of the greenbacks then outstanding on their present-

tion for redemption at the office of the Assistant Treasurer of the United States in the city of New York.

It should be noted that the Resumption Act of 1875, while it provided for the re-establishment of the gold standard after four years, did not involve any contraction of the currency. What contraction of the greenbacks took place before resumption of specie payment was to be offset by expansion of national bank notes, which served the same purpose in circulation as greenbacks, although not as bank reserves for national banks, for which they were not eligible. And while the greenbacks remaining in circulation after January 1, 1879, not less than \$300,000,000 in amount, were to be redeemable upon demand in coin, and this meant in effect, gold coin, the act neither required their retirement nor prohibited their reissue. On this point it was quite silent, and the law could be interpreted as anyone saw fit, but with the probabilities in favor of the amount of greenbacks outstanding at the time of resumption remaining unchanged.

The inflationist element, however, scored one more victory in respect to the amount of greenbacks to remain outstanding. An Act of Congress in 1878 prohibited further retirement of the greenbacks, which had then been reduced to the amount outstanding today, namely, \$346,681,000. Thereafter, the Greenback Party, although it placed Presidential candidates in the field repeatedly, as it had done in 1876 when the Greenbackers, disgusted with the old-line parties, had first formed an independent party of their own, could accomplish no tangible results, and the Greenbackers were eventually overshadowed by their brother inflationists, the protagonists of the free and unlimited coinage of silver at the ratio of 16 to 1, whose achievements and lack of achievements we have already briefly chronicled in an earlier chapter.

10. THE CASE AGAINST THE GREENBACKS

The case against the greenbacks may be summed up as follows:

They should in the first case never have been issued, and their issue would have been quite unnecessary as a war measure if a reasonable amount of intelligence had been displayed by the Government and the people in building up a tolerably sound monetary structure before the war and in managing the money and banking system during the war. As a source of war funds they were unimportant with relation to the total amount of money raised by loans and taxation combined. As against the \$450,000,000 obtained by the issue of the greenbacks, there were raised during the war period almost \$3,000,000,000 by means of taxation and interest-bearing loans. Apparently, if the Government

was able to raise almost \$3,000,000,000 by loans and taxation, it would not have been impossible to raise \$450,000,000 more. The chief function of the greenbacks, therefore, was to serve as a medium of exchange and not to provide government revenue. But with reasonably good financial management, there would have been plenty of gold and bank notes to serve as a medium of exchange, the amount of gold and silver in circulation on June 30, 1861, having been \$266,400,000, which, together with \$218,006,000 of miscellaneous currency, including state bank notes, made a total of \$484,406,000, or approximately \$15.11 per capita.

Issued in great quantities along with the interest-bearing legal tenders and the fractional currency, they caused a tremendous rise in prices, first, because of the mere increase in the quantity of money in circulation, and second, because of lack of confidence in their ultimate redemption when the fortunes of the Federal cause ran low. At one time they had depreciated in terms of gold to the extent that one dollar in greenbacks was worth only about \$0.35 in gold, or one dollar in gold was worth \$2.85 cents in greenbacks. This means that prices in terms of greenbacks were quoted 185 per cent above gold prices, and the greenbacks may, therefore, justly be charged with having caused a price-inflation of at least 185 per cent, leaving out of consideration the fact that their expulsion of gold from circulation in the United States had probably in some measure cheapened gold itself and caused a rise in gold prices. Not only did the greenbacks cause or permit this great rise in prices, but, since their value rose and fell sharply and unexpectedly in terms of gold with the fortunes of war and war finance, their use as standard money caused frequent and severe fluctuations in prices extremely demoralizing to business. Finally, after the extremes of inflation came the inevitable deflation, brought about, not merely by some reduction in the quantity of legal tenders in circulation, but by the increasing confidence in ultimate redemption. It is unnecessary to discuss here in detail the evils inseparable from rising and falling and fluctuating prices, since these have been sufficiently discussed in earlier pages.

Still another serious charge justly brought against the greenbacks is that their issue and the concomitant inflation of prices enormously increased the cost of the war. The bonds which the Government sold during the period of inflation were paid for in greenbacks, but the interest on these bonds and the principal were paid to the investors in gold. Many hundreds of millions of dollars were thereby added to the ultimate cost of the war, eventually paid in full by the taxpayers.

Having been issued contrary to the dictates of sound financial management, the greenbacks in all conscience should have been retired as

soon as possible after the war emergency was over. As already indicated, the Government did not lack the means of retiring them during the first few years after the war; it lacked only the will; it feared deflation and the wrath of the inflationists. Admittedly, deflation is an evil, no less than inflation, and should not be perpetrated without good reason. But the deflation necessary to retire the greenbacks and restore the country promptly to a gold basis after 1865 was not drastic. Increasing confidence in the stability of the Government and its power to meet its financial obligations, together with the cessation of war demand for commodities, had already carried the necessary process of deflation so far that the average premium on gold in 1865 was only 57.3 per cent. Stated differently, a greenback dollar was worth about 64 cents in gold. Assuming that a fixed policy of gradual retirement had speedily brought prices back to a gold basis, and that gold prices themselves had remained unchanged, a 36 per cent decline in prices would have been the result. While this amount of deflation, added to the deflation that had already occurred, would doubtless have worked hardship on many people, it would probably have done far less damage to business, by and large, than the sharp fluctuations in the value of the greenbacks did over the period of fourteen years between 1865 and the date of resumption of specie payment in 1879.

As an alternative to the restoration of the gold standard by the process of deflation, there was, of course, the possibility of restoration by devaluation without deflation. The content of the gold dollar could have been reduced by 30 or 40 per cent, and the country then restored to the gold standard without much disturbance to the existing price-level.

When specie payment was resumed and the gold standard thereby re-established in 1879, some ten years later than necessary, the greenbacks should not merely have been redeemed; they should have been retired. They should not have been permitted to remain outstanding in such large quantities that they remained disturbers of confidence and a menace to the gold standard for almost another twenty years. For many years the outstanding greenbacks alone, leaving out of consideration the overvalued silver dollars, silver certificates, and treasury notes of 1890, amounted to more than fifty per cent of the total stock of gold coin and bullion in the United States. It was only in 1898 that the stock of gold in the United States definitely passed the \$700,000,000 mark and thus exceeded twice the amount of the outstanding greenbacks. There can be little doubt that, during the long interval between 1865 and the date of the firm establishment of the gold standard in 1900, the outstanding greenbacks did more harm than good.

Thirty years later, however, the greenbacks had ceased to represent an important problem. With a total gold stock of around \$1,000,000,000 the comparatively small quantity of \$316,681,000 of greenbacks, together with the somewhat larger amount of overvalued silver in circulation, would not have proved dangerous or destroyed confidence in our ability to maintain the gold standard, provided our banking machinery had been managed with a reasonable degree of prudence. In fact, on the basis of the Utopian economics discussed in the preceding chapter, something might even have been said in favor of retaining the greenbacks in circulation in this relatively limited quantity, as a cheap substitute for gold.

CHAPTER X

THE NATURE OF COMMERCIAL BANKING

1. ESSENTIAL FUNCTIONS OF A COMMERCIAL BANK

THE essential functions of a commercial bank are just two in number — namely, the accepting of deposits of temporarily idle funds of business men and others in the community, and the making of short-term loans, primarily to business men, but also to other persons who are in a position to give the bank satisfactory assurance of repayment. A third important function of a commercial bank, but not an essential one, is the issue of bank notes, a type of paper money. In the United States, for example, where we have three classes of commercial banks — national banks, state banks, and trust companies, only one class, the national banks, issue bank notes.¹ Our federal reserve banks also issue bank notes, but they are more properly considered as bankers' banks than as commercial banks, although they engage in commercial banking operations of a specialized type.

In addition to exercising their essential functions, commercial banks, if properly managed, find it advisable and profitable to carry on other kinds of financial operations, such as making long-term loans on real estate, investing in stocks and bonds, accepting deposits not subject to withdrawal without notice on which interest is paid, purchasing commercial paper and bankers' acceptances in the open market, and so on. But in most cases, if not in all, these other operations should remain incidental and supplemental to the main functions and the essential functions of the commercial bank, namely, the accepting of non-interest-bearing deposits subject to withdrawal by check without notice, and the making of short-term loans — that is, loans running six months or less — to business men and others able to give ample security.

Commercial banking operations in general are much the same in all advanced industrial countries, but there are some important differences in detail, so that a discussion of commercial banking as carried on in one country would not in all respects be applicable to some other country. In the present chapter the discussion will be based upon banking conditions in the United States.

2. ORGANIZING A COMMERCIAL BANK

The nature of commercial banking operations and the principles of sound banking practice can be most readily explained by means of a

¹ See Chapter XXX. National banks no longer issue notes.

simplified supposititious example involving a description of the development of a bank from the time of its organization until it may be assumed to be operating on a normal basis after a period of growth extending over several years. In order to keep our example from becoming complicated by the intervention of particular rules and regulations relating to some particular State or the National Government, we shall use for illustrative purposes the fictitious Bank of Centerville of an unnamed Middle-Western State.

Certain substantial citizens of Centerville, believing that there was room for a fourth bank in addition to the three already established in the city, applied to the Secretary of State for a charter for a banking corporation to be organized with a capital of \$100,000 and to carry on its business under the name of the Bank of Centerville. Incidentally it may be remarked that all our state and national banks are organized as corporations, and not as partnerships or individual proprietorships, as many of our other kinds of business organizations are. As corporations they are legally presumed to have a personality distinct from that of their stockholders, and this distinction between the bank as a corporate entity and its owners, the stockholders, is recognized also in accounting practice. If this fact is kept in mind, it may save a considerable amount of mental confusion in respect to the bookkeeping operations of the bank and its financial statements, including the balance-sheets that banks are required to publish from time to time under the laws of our State and Federal Governments.

The charter of the Bank of Centerville having been granted by the state official to whom application had been made, the bank was duly organized as indicated with a capital of \$100,000. The persons directly concerned in the organization of the bank were the stockholders, who subscribed the \$100,000 in capital, the directors whom they chose to direct the affairs of the bank, and the officers appointed by the directors to take active charge of the management of the institution. Among the stockholders were a few prominent and wealthy men who subscribed more than half of the total capital, and a considerably larger number of local business men who took a small number of shares each. The total number of shares was 1000, each with a par value of \$100. Each stockholder paid into the treasury of the bank \$100 for each share he subscribed to and received in acknowledgment of this payment a stock certificate indicating the number of shares he bought.

The stockholders were permitted to vote for members of the board of directors, casting votes in proportion to the number of shares they owned. The prominent men who had subscribed for more than half

the shares were therefore able to choose for directors the men they desired. The directors chose the administrative officers of the bank, including a president, vice-president, cashier, and assistant-cashier. A bookkeeper and other clerical assistants were then employed.

It remained to provide the bank with a place of business. To have purchased a building suitable for the bank would have gone far toward exhausting the amount of money subscribed as capital and would have left the bank with insufficient working capital. A suitable banking room was therefore rented, furniture and fixtures were installed, and the Bank of Centerville was ready for business.

3. THE MAIN PURPOSE OF A BANK

Thus far nothing has been said about the purpose of the Bank of Centerville. Its main purpose was to earn an income for its stockholders on the capital they invested in the enterprise and liberal salaries for such of their number as were chosen as administrative officers of the bank and who devoted their time and business ability to making it a success. While there may have been some talk about "service to the community," it should be understood that when a bank subordinates its own profit to service to the community, the results at the best are likely to be doubtful. This will ordinarily mean the making of unsound loans to business men who should not have them, because neither their own best interests nor the best interests of the community will be well served thereby. At the worst — and this is not uncommon — the bank that goes in strongly for "serving the community" lends the funds of its own stockholders and of its depositors to its own directors or their friends and relatives without adequate security and with every prospect of eventual disaster to the bank, the stockholders, and even to the favored borrowers, and probably to the community. That bank will in the long run best serve its community which holds tight its purse-strings, makes no loans unless under very exceptional circumstances, which are not amply secured by the capital and character of the borrower, and which are not for some legitimate business purpose giving every evidence of turning out successfully. If such a bank lends at a reasonable rate of interest and is reasonably considerate at times of stress to its debtors, and nevertheless makes good profits, it will have served its community amply in the most legitimate way.

It is obvious that if a bank with a capital of only \$100,000 is to earn a return on the invested capital of the stockholders in addition to paying liberal salaries to its officers, lesser salaries to its clerical staff, rent, and other expenses, it must obtain considerable income in addition to the in-

come it might enjoy merely by lending its original capital at something like 6 per cent. The annual expenses of even a small bank paying very moderate salaries and low rent will easily run above \$12,000, or twice the income derived from lending \$100,000 at the rate of 6 per cent a year. This extra income it obtains in the main from lending or investing the money of its depositors left with it temporarily without interest or at a very low rate of interest. For the time being we will not enter upon the discussion of the question of whether or not a commercial bank has a lending and investing power in excess of the amount of deposits it has received plus the amount contributed by its stockholders. Here it need only be said that unless a bank could lend and invest more than the amount of its own capital, it would never pay to organize a bank, since the stockholders who contribute the capital could lend it as individuals, or invest it, to yield them in all probability 6 per cent, without becoming involved in the heavy expenses of running a bank. Incidentally, this conclusion gives us early in our discussion of banking an answer to the argument, believed by many to be irrefutable, that since a commercial bank charges interest on its loans it ought to pay interest on its deposits.

If a commercial bank is unusually successful, it may develop an investment and lending power great enough to pay, not merely operating expenses and 6 per cent on its capital, but several times 6 per cent. There are instances on record where an old established bank has paid as much as 100 per cent in dividends annually on its original capital investment. Such great success means, not only that the stockholders may enjoy a very liberal income on the par value of their stock, the original investment, but that they can, if they desire, sell their shares of stock for many times the par value. Certain New York bank stocks, and no doubt others as well, have actually had a market value at times above \$5000 for an original par value share of \$100. Such great earning power and market value are, of course, based, not merely upon the original investment, but upon additional investments of undivided profits left in the bank and, as a bookkeeping operation, carried to surplus. The other side of the shield is less inviting. When a bank fails — and many thousands have failed in the United States — stockholders commonly lose every dollar they have invested in the enterprise, and often even more. Under the banking laws of the United States, as well as under the laws of the individual states, stockholders in banks have been subjected to the so-called double liability. This means that a stockholder, in addition to losing his original investment amounting to the par value of his stock, might be assessed an equal amount if the levy were required to pay the depositors and other creditors of the bank in full. Thus a man who

had bought ten shares of stock with a par value of \$100 a share might be assessed an additional \$1000 if the bank failed. That this has been no mean risk is indicated by the fact that more than ten thousand banks failed in the United States from 1921 to 1932 or more than one third the total number of banks in operation at the beginning of that period.

4. THE BANK OF CENTERVILLE'S FIRST STATEMENT

The Bank of Centerville, having been properly organized and having acquired a suitable personnel and a banking room, proceeded to prepare for business. It was necessary, first of all, to install banking furniture and fixtures, and this required an expenditure of \$10,000. There were, of course, other expenses incurred before any income had been earned, but these and subsequent operating expenses will be disregarded for the sake of convenience and simplicity in exposition in our illustrative case, with the understanding that a real bank would have to take them into consideration in its bookkeeping. Before the bank opened its doors, the bookkeeper might have drawn up a financial statement of its condition as follows:

BANK OF CENTERVILLE			
(Statement No. 1)			
<i>Resources</i>		<i>Liabilities</i>	
Cash.....	\$90,000	Capital stock	\$100,000
Furniture and fixtures.....	10,000		
Total.....	<u>\$100,000</u>		<u>\$100,000</u>

The foregoing statement lists the resources or assets of the bank on the left-hand side and the liabilities on the right-hand side, and may be called a balance-sheet. This is the customary form in which bank statements are published periodically by the commercial banks in the United States. It should always be borne in mind that a bank statement represents the resources and liabilities of the banking corporation, and not those of its stockholders. The various items listed on the liability side of bank statements are a source of great confusion to many because, as we shall see a little later, some of these items would appear to be assets and not liabilities. Such confusion can be avoided if the reader will always bear in mind that on the liability side of a corporation balance-sheet are listed the sources from which the assets shown on the other side have been drawn and the disposition that is to be made of them when, or before, the corporation is dissolved. In Statement No. 1, for example, the item "Capital stock" indicates that \$100,000 has been received from the sale of capital stock, and that, moreover, this amount ought to be returned to the stockholders if the bank should be dissolved.

Real bank statements show the condition of the banks on a given day, and are dated, and not numbered.

5. THE ITEM OF DEPOSITS

The Bank of Centerville, having opened its doors for business, a number of depositors entered and made deposits of \$45,000, of which \$5000 was in cash, and \$40,000 in the form of checks drawn against the other banks of Centerville. Most of these depositors were stockholders in the new bank, and their deposits represented a sort of good-will offering withdrawn from the other banks in which they held no stock. In the course of time the new bank hoped to attract other depositors. At the same time applications for loans appeared, but it will be well to present a second statement of the bank showing the effects of the deposits on the balance-sheet separately from the effects of the loans granted.

BANK OF CENTERVILLE (Statement No. 2)

<i>Resources</i>		<i>Liabilities</i>	
Cash.....	\$95,000	Capital stock	\$100,000
Furniture and fixtures....	10,000	Deposits	45,000
Checks on other banks ..	40,000		
Total.....	<u>\$145,000</u>		<u>\$145,000</u>

It will be observed that cash has increased from \$90,000 in the preceding statement to \$95,000, and that total resources have risen from \$100,000 to \$145,000. The \$40,000 item of checks on other banks might readily be converted into cash in this particular case simply by presenting these checks to the other banks in Centerville and demanding payment in cash. But after the Bank of Centerville has been operating for some time, it will be found that its own depositors have drawn checks against their deposits with it, and that some of these checks have found their way into the hands of the other banks, which can then use them as a counterclaim against the Bank of Centerville. In that case it will be able to consider as cash, and to collect in cash, only the excess of checks it holds drawn on other banks over the checks held by other banks drawn on it. Naturally, too, in the course of its business the Bank of Centerville may expect to receive from its depositors checks drawn against banks in other cities, and to have presented to it by banks in other cities checks drawn against it by its own depositors who have used personal checks to pay out-of-town bills. How these various payments may be made or offset against one another will be discussed later. Here it need only be noted that the Bank of Centerville may eventually find that the sum total of all checks drawn against it by its own depositors,

and finding their way into the hands of other banks in Centerville and outside, will exceed the amount of all the checks it receives from its depositors drawn against other banks, and that it may be compelled to pay cash on balance to all the other banks in the aggregate rather than enjoy receiving cash on balance from them.

This, of course, need cause the bank no worry, provided that it made no use of the deposits placed with it by its depositors other than cashing checks drawn against them, for in that case it would always have cash enough on hand to meet all demands — the depositors not having the right to draw checks in excess of the amount deposited. This would be true even if the deposits had been in the first place composed exclusively of checks on other banks. In that case the amount of these checks drawn on other banks would exactly offset all checks that the depositors would be in a position to draw, and all checks, therefore, that could be presented for payment either directly at the counter by customers of the bank itself, or by other banks into whose hands they had fallen. But, as previously stated, a bank, to pay operating expenses and earn a fair return on its stockholders' invested capital, must lend and invest, not merely its stockholders' capital, but also money placed with it by its depositors; and this brings us to the subject of loans.

Before beginning the discussion of loans, however, a word of caution must be given concerning the item of deposits on the liability side of Statement No. 2. The average man who has not made a careful study of bank statements thinks of bank deposits as consisting of cash, and he cannot understand, therefore, why the item "Deposits" appears on the liability side and not on the asset side of the statement. Bearing in mind, however, what has already been said, that liability items indicate merely the source and the ultimate disposition of the assets of the banks, it becomes easier to understand why the item of "Deposits" is found on the liability side. Bank Statement No. 2 merely says in abbreviated form that the bank has received from depositors the sum of \$45,000, and, since these are demand deposits, it must be prepared to return this amount to the depositors upon demand and without previous notice. Since a bank's deposits are a liability, and not an asset, it is, of course, a serious blunder to think that large deposits are a sign of strength. Large liabilities are not a source of strength, but, on the contrary, a source of weakness, and more particularly so when they represent cash payable upon demand. For indications of strength of a bank one must look to the asset items. If these are not ample to meet all demands for cash when the demands are made, the bank is weak regardless of its size.

6. LOANS AND DISCOUNTS

Applications for loans poured into the Bank of Centerville in much larger volume than deposits — applications from speculators in real estate and stocks; from spendthrifts who desired to spend more than their current income on automobiles, radios, furniture, clothing, groceries, cosmetics, and what not; from victims of misfortune; from business men who wanted to expand their manufacturing plants or storerooms, or install new and costly equipment; from retailers who wanted temporary accommodations to help them carry their stock of goods; from manufacturers to help pay for additional stocks of raw materials and to meet payrolls.

The cashier, contrary to the point of view of many new era economists, speculators, local boosters, temporarily big and successful bankers, and others, held that a commercial bank could not safely make loans in substantial amounts to any except the two last-named classes of applicants. His view was, in short, that, since a commercial bank to be successful must have relatively great demand liabilities in the form of deposits subject to check, it must utilize its funds mainly in making short-term loans under such conditions that they would be practically certain to be repaid at maturity. Most of the loans requested of the bank did not meet these conditions. Real estate speculators usually wanted, not a short-term loan, but a long-term loan. Speculators in stocks might be satisfied with a short-term loan, secured by their stocks offered as collateral, but in case of a crash on the market, they might be unable to pay, and their stocks might be worth less than the face value of the loan. As for the spendthrift loans, people who live beyond their means are notoriously poor pay, and the bank would be certain to lose a substantial part of the money lent to such persons. Victims of misfortune should be accorded a hearing, and accommodated in some cases, but, after all, they are cases for charity rather than proper persons to whom to lend money held in trust by the bank, in effect, for its depositors. Loans for expansion of plant and equipment might be used to good advantage by business men, but would not provide the borrowers with the means to repay them within a few months. Such loans would normally have to be carried for years, and could not properly be made in large amounts by a commercial bank.

But with the loans to retailers the case was different. If a retailer borrowed \$1000 from the bank for sixty days, he might with this sum purchase additional shoes, hardware, or groceries, and before the loan matured sell these goods for considerably more than the amount of the loan, and thus out of the proceeds of his sale repay the bank. The nor-

mal spread between wholesale and retail prices would ordinarily assure the bank that the retailer would not suffer a loss on the transaction which might make it impossible for him to repay the bank with the money taken in on his sales. Naturally, the bank would want to know a good deal about the degree of success with which the retailer had been operating in the past and be assured of his honesty. A retailer is not a good bank risk merely by virtue of being a retailer.

Similar considerations held, the cashier believed, for loans to manufacturers for the purchase of raw materials and meeting of payrolls. Normally the time which elapses between the purchase of a batch of raw materials and the sale of the product made therefrom is short — in some cases a few days, in some a few weeks, and in others a few months, but rarely is it a year or longer. The value of the product will normally be considerably in excess of the cost of the raw materials plus the amount of the payrolls, and hence the proceeds of the sales may ordinarily be expected to be ample to repay the bank loan. As in the case of the retailer, so in the case of the manufacturer, the bank would need to know a great deal about the borrower's character and business.

With these considerations in mind, the cashier of the Bank of Centerville made comparatively few loans to others than retailers and manufacturers who had demonstrated by their past record some measure of business ability and capacity to pay their debts. Consider now how \$30,000 of such loans granted for sixty days at the rate of 6 per cent a year affected the financial statement of the bank, and the business interests of the borrowers.

The customary procedure in advancing bank loans in the United States is for the borrower to give to the bank his promissory note for the amount of the loan. In some cases the note is signed only by the borrower, and is accepted by the bank without any other security or collateral, so that the bank has merely an unsecured promise of the borrower to pay the sum due. If the bank is not satisfied with such an unsecured promise to pay, it may demand that a second party of good financial standing in the community endorse the note, and thereby make himself liable for payment if the debtor defaults, or it may require the borrower to deposit with it as a pledge of payment suitable collateral, such as stocks or bonds. Such collateral the bank may sell if the borrower is unwilling or unable to pay when his loan is due, returning to the latter any sum left over after settlement of its own claim. In some cases the bank may also take a mortgage on the borrower's real estate or other property, even though the loan has not been made for the purpose of buying such property. Usually the promissory note is not made payable

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with interest added to the amount of the note, but is made payable only to the amount of its face value, and the borrower is credited with the face value of the note less the interest for the specified time. This process is called discounting. With interest at the rate of 6 per cent a year, a note for \$1000, due in two months, for example, would be discounted to yield the borrower 1 per cent less than its face value, or \$990, the rate for two months being one sixth of the rate for one year. Theoretically this discount is justified on the ground that present goods are more to be desired than future goods and command a premium over future goods. In effect, the bank is paying \$990 today for \$1000 payable two months later, and the difference of \$10 represents the premium on the present dollars in terms of future dollars.

Borrowers often complain that the process of discounting, which amounts to taking the interest on the loan out of the loan at the time of making the loan, is unfair. They hold that if a man gives his note for a loan of \$1000 for two months at the rate of 6 per cent a year, or 1 per cent for the two months, he is entitled to the use of \$1000 for that time, and not merely to the use of \$990. He is, in fact, paying \$10 for the use of, not \$1000, but \$990, and is actually, therefore, paying a greater rate of interest than 6 per cent a year. It cannot be denied that discounting at the rate of 6 per cent a year represents a greater charge than 6 per cent interest paid along with the principal when the note is due. and to this extent the complaints of the borrowers are justified. If, however, the rate of discount is moderate and the time of the loan short, it is a matter of little consequence whether the interest is paid in advance or when the loan matures. The difference may be said to represent interest on the interest. If a bank discounts a \$1000 note at the rate of 1 per cent, the customer in effect pays \$10 interest for a \$990 loan. If he had obtained what is called a straight loan of \$990, due in sixty days, with interest at 1 per cent, he would have paid back \$9.90 more than he received. The difference in this case is only ten cents, not a matter of great moment, and not a crushing additional burden on the debtor. If, however, the rate of discount is high and the duration of the loan longer, the difference may become of considerable importance. A note for \$1000 discounted for one year at the rate of 10 per cent would net the borrower only \$900, and would cost him, therefore, \$100, whereas a straight loan of \$900 at 10 per cent would cost only \$90. This discount would really represent straight interest at the rate of 11.1 per cent a year. On pawnbroker or loan-shark loans, the situation would be much worse. A \$1000 note discounted at 50 per cent would net the debtor only \$500, and cost him \$500, and this would amount to straight interest at the rate of 100 per

cent a year. Since most bank loans are for short terms at moderate rates, the matter of the discount versus the straight loan is of no great importance.

7. LOANS MADE IN THE FORM OF DEPOSITS SUBJECT TO CHECK

A matter of much greater importance in banking than the difference between a discount and a straight loan is the form in which the borrower receives his loan. Conceivably a bank may advance to the customer the proceeds of his discounted note in cash, and some loans are made in this way. But more frequently the borrower receives from the bank no cash at once, but is merely credited on its books with a demand deposit to the amount of the discounted value of the note. This method of making the loan offers advantages, not only to the bank, which thus avoids the necessity of paying out at once that much cash, but also to the borrower, and this is the reason why most bank loans are made in this way. Discussion of these advantages may be postponed while we pause to note that a bank's deposits may result in part from the making of loans, and that not all deposits are the result of cash and checks on other banks brought into the bank to be credited to the customers' accounts. At this point it will be convenient to draw up a third statement of the Bank of Centerville for the purpose of showing the effect of the loan operations just described upon its condition.

BANK OF CENTERVILLE

(Statement No. 3)

<i>Resources</i>		<i>Liabilities</i>	
Cash.....	\$95,000	Capital stock.....	\$100,000
Furniture and fixtures.....	10,000	Deposits.....	74,700
Checks on other banks.....	40,000	Undivided profit.....	300
Loans and discounts.....	30,000		
Total.....	<u>\$175,000</u>		<u>\$175,000</u>

For the convenience of the reader in following the development, in these various statements of the Bank of Centerville the items are arranged in order of the time in which they are presumed to originate. On the asset side the first three items remain unchanged, and a new item, called "Loans and discounts," appears, to the amount of \$30,000. Strictly speaking, all the transactions covered by that item are presumed to have been discounts, but "Loans and discounts" is the term most commonly found in bank statements. The most significant point to note in respect to the bank's resources is that cash has not been reduced even though \$30,000 in loans have been made, the explanation for this having already been given — namely, that the loans were advanced in the form of deposits subject to check.

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On the liability side deposits are accordingly shown to have increased, but not by the full amount of the loans. The discount of \$300 has been deducted, leaving the proceeds of the \$30,000 in loans credited to the customers' accounts only \$29,700, which, added to the previous deposits of \$45,000, gives a total of \$74,700. It may be observed now that, of these deposits, some originated as the result of cash brought into the bank, some as the result of checks on other banks deposited with the bank, and some, as just stated, as the result of discounting the customers' notes; and there is nothing on the face of the bank statement to indicate to what extent each of these three sources has been responsible for the deposits.

Regardless of the source of the deposits, however, each dollar of deposits credited to a customer's account has been offset by a dollar increase in the resources of the bank. It might appear, indeed, that the increase in the "Loans and discounts" item more than offset the corresponding increase in deposits, by the amount of \$300. But the \$30,000 in loans and discounts, it must be remembered, represent not present goods, but in this case money due in sixty days, and they are therefore not really worth their face value — on the bank's books they are overvalued by the amount of the discount. Only at the end of sixty days will the bank actually realize this \$30,000. In this same connection it should be observed that the \$300 "Undivided profit" item might more truly be called "Unearned discount," and this term is sometimes used in bank statements. The \$300 will not actually have been earned until the loans mature, and only then may the sum properly be termed "undivided profit" — that is, profit realized by the bank, but not yet distributed among the stockholders nor set aside as part of the permanent surplus to be reinvested in the business. Even then, according to the distinctions made in theoretical economies, it would not represent profit except in part, but would consist in large measure of interest and wages, but with these sound but fine distinctions of economic theory we need not here be concerned. Of a great deal more importance toward an understanding of banking theory and practice is the fact that the deposits have increased with no corresponding increase either in cash or checks on other banks. There has been a large increase in liabilities payable in cash on demand, but no increase in cash assets. Loans due in sixty days cannot be used as a means of meeting cash demands of depositors today.

It has already been stated that it is advantageous for the borrower to receive his loan from the bank in the form of a deposit subject to check rather than in the form of cash. This is true simply because, as business is organized in the United States at the present time, it is ordinarily more

convenient to make payments with bank checks than with cash, and a bank deposit against which checks may be drawn is, therefore, more desirable than cash. It is perhaps hardly necessary, but it will do no harm, to enumerate some of the advantages gained by the use of checks. It is more convenient and safer to carry a check-book about in one's pocket than to carry a large sum of money. A check can be written out for any desired combination of dollars and cents, and this saves time and trouble in counting and adding. To pay in cash \$1398.89, for example, requires the handling of many pieces of money, and even if the payer can quickly select the most simple combination of paper bills and coins to effect the purpose, the counting and adding up of all these pieces will probably involve more time than is required to write out a check for the full amount. Moreover, there is always the possibility of making a mistake in adding, and the payee, who may be slow-witted, must be allowed sufficient time to go through the process of counting the whole sum over to satisfy himself that no mistake has been made to his detriment. Again, if the payer gives the payee a large bill from which the amount due is to be deducted, and the process of adding or subtracting and checking up is reversed, there is the danger, too often present, of being "short-changed." In making payments to distant points, it is much more convenient and economical merely to send a personal check through the mail than to ship money or to buy a post-office or express money order. Finally, payment by check represents a simple method of retaining a written record of all payments made. If the check-user will always make a notation of the purpose for which the check was paid, in the space conveniently provided, and will then file for permanent reference his cancelled checks when they are returned to him by the bank, he will not only have a handy method of recording his itemized expenses, but he will have proof that all payments which he has made have actually been made to the party designated on the check. This proof consists of the signature of the payee, which he must usually place on the back of the check — a process called endorsing — when he presents the check for payment or credit at his own bank or elsewhere.

So widely have these various advantages of payment by check been recognized in the United States that for the most part cash is used only in small retail transactions and in meeting payrolls of workingmen who have no bank accounts and do not care to be bothered with cashing pay checks. Numerous robberies and murders could be prevented if these workingmen could be persuaded to open bank accounts and participate in the use of checks.

As already indicated, the making of loans in the form of deposits

subject to check instead of in the form of cash holds advantages for the banks as well as for the borrowers, but discussion of these advantages must temporarily be postponed. Provisionally it may be stated that the apparent advantage of this method of making loans is the obvious fact that the bank thus avoids the necessity of the immediate payment of cash; but superficial appearances here are deceptive and detailed discussion of this point will uncover complications not always suspected by the layman and not even by the bankers themselves. This remark will be substantiated in due course. In the meantime let us follow somewhat further the fortunes of the Bank of Centerville.

8. THE BANK OF CENTERVILLE GROWN UP

We may examine next a statement of the Bank of Centerville showing the bank as a full-fledged banking institution, and containing a large part of the items commonly found in the reports of small banks.

BANK OF CENTERVILLE

(Statement No. 4)

<i>Resources</i>		<i>Liabilities</i>	
Loans and discounts.....	\$805,000	Capital stock.....	\$100,000
Real estate loans.....	70,000	Surplus.....	50,000
United States bonds.....	40,000	Undivided profit.....	10,000
Corporation bonds.....	75,000	Demand deposits.....	800,000
Furniture and fixtures.....	10,000	Time deposits.....	170,000
Checks on other banks.....	22,000	Due to other banks.....	15,000
Due from other banks.....	25,000	Certified checks.....	2,000
Cash on hand.....	100,000		
Total	\$1,147,000		\$1,147,000

In this statement appear various items not met with before which require a few words of explanation. "Real estate loans," the first new item on the Resources side, represent long-term loans and must be sharply distinguished from the short-term loans and discounts. The next two items, "United States bonds" and "Corporation bonds," represent investments of the bank as distinguished from its loans and discounts. While the distinction between loans and investments is commonly observed in bank statements and in discussions of banking operations, one should not lose sight of the fact that the difference between the two is not so distinct as one might imagine. After all, a bank which has "invested" in a government bond has either directly or indirectly extended a loan to the Government, and so long as it owns the bond the Government owes it the face value of the bond and pays interest on this debt. Similar considerations hold for corporation bonds. Again, when a bank discounts a customer's promissory note for sixty days, it may quite truly be said to be investing in a promissory note.

Whether the bank is buying a bond or discounting a note, it is paying today a smaller number of dollars for a somewhat larger number of dollars to be delivered to it in the future, and in that respect the two classes of operations are identical.

There are, however, important differences between the ordinary bank discount and a bank's investment in a government bond. The discount represents a short-term loan, and the note will ordinarily be held by the bank until it matures, and there is a close personal relation between the borrower and the bank. The bond may or may not represent a long-term investment, and it may or may not be held to maturity. There is no close personal relation between the bank and the Government or the previous investor from whom it has bought the bond, and no feeling of obligation to hold the bond until it matures. The bond may be sold at the market price any day the bank desires, and its cash value thus realized. The short-term promissory note will not fluctuate in value in such a way that the fluctuation needs to be taken into account by the bank, unless the loan turns out to be bad and is not paid when due. Long-term bonds may fluctuate in value, not only when doubt arises as to their payment at maturity, but also when the current rate of interest rises above or falls below the coupon rate of the bond. Such fluctuations in the value of a bank's assets are undesirable, and for this reason, if for no other, short-term discounts are to be preferred by a conservatively managed bank to long-term bonds. On the other hand, good government or corporation bonds represent a better investment for a bank than such long-term loans as are represented by real estate mortgages, since good bonds, while they may fluctuate in value, always have a ready market and can be converted into cash on short notice, whereas real estate mortgage loans cannot so readily be converted into cash before maturity.

The item "Checks on other banks," although it has appeared before, requires a few more words of explanation. Checks on other banks may represent either checks drawn against banks in Centerville or against out-of-town banks. It is customary for checks drawn against banks in the same city to be stated separately from other checks and to be labeled "Exchange for clearing-house," and for other checks to be placed under some other heading, such as "Checks on out-of-town banks," or "Checks on other banks."

While checks drawn against other banks represent sums due from other banks, the term "Due from other banks," is commonly used to cover only sums due from other banks for other reasons. A bank, for example, may have deposited funds with another bank at interest,

small banks commonly so depositing part of their "cash reserve." As we shall see later, all member banks of our present Federal Reserve System are required by law to deposit all their legally required reserve with their respective federal reserve banks. Banks also commonly maintain deposits in banks in other cities in order to have the right to draw against such banks, checks called "bank drafts," which their customers sometimes require in making payments in distant cities under conditions such that a personal check will not be accepted readily. On both of these points it will be necessary to say more later, but enough has been said here to indicate the general nature of the item called "Due from other banks." What has just been said about the item "*Due from other banks*" applies in the same general way to the corresponding item on the liability side called "*Due to other banks*." For a small bank this item may represent the sum of certain checks drawn on other banks in its section of the country, which it has collected for the account of banks in other parts of the country which have sent the checks to it for that purpose. Banks which have such accounts and relations with one another are called "correspondent banks."

The surplus of a bank is ordinarily understood to represent net earnings, or profits, which it has set aside from the amount to be paid out in dividends on the stock, and which it has invested more or less permanently in the business, the same as the original capital invested by the stockholders. Capital and surplus from one point of view may, therefore, be lumped together as a single item in the bank statement, as representing the total investment of the stockholders. But from another point of view it is desirable that they be stated separately, since the relative amount of the surplus indicates the degree of prosperity the bank has enjoyed in the past, and tends to throw some light on its soundness and efficiency. Stockholders, recognizing that a large surplus may be understood to indicate good management, sometimes take advantage of that fact by paying into the bank more than the stated par value of the stock when the bank is organized, and thus start the new bank out with a substantial, but unearned, surplus. Another reason for calling "surplus" part of the sum originally paid in by stockholders, which would more properly be called "capital," is that under our banking laws the double liability of stockholders applies only to capital and not to surplus.

In Statement No. 4, on page 238, deposits have been divided into two classes, "demand deposits" and "time deposits." A strictly commercial bank, making its main business the discounting of short-term promissory notes, should ordinarily have no time deposits, on which interest

is commonly paid. But if a bank desires to make long-term loans or invest in corporation bonds, it will find it desirable to have time deposits as well as demand deposits. Time deposits, as the term implies, are deposits which may not be withdrawn without previous notice, and the bank need, therefore, not be so scrupulous in maintaining the corresponding resources in a strictly liquid condition as in the case of the assets offsetting demand deposits which may be withdrawn without notice.

The small item, "Certified checks," represents the sum of the checks drawn against the bank, but not yet presented to it for payment, which have been certified by the bank. A check is certified when the teller or other official of the bank has signed his name on it and stamped it "certified." This procedure guarantees payment of the check when presented, because the bank at once sets aside an amount from the customer's account for the special purpose of meeting payment on the certified check. The item of deposits is reduced, of course, at the time the check is certified, by the amount of the check. If, for example, the Bank of Centerville had not certified \$2000 in checks, as shown in Statement No. 4, demand deposits would presumably have remained \$2000 larger. A certified check is often used where otherwise a bank draft would be required.

9. MAINTAINING SOLVENCY

Having now noted the various items of Statement No. 4 individually, let us examine them in the aggregate, and observe whether or not the figures indicate that the bank is in such a condition that it could presumably meet all demands for cash that would be likely to be made upon it. If the assets of the bank are of such a nature that it could not readily meet all demands for cash which might reasonably be expected to materialize, then it has been mismanaged and will probably fail sooner or later.

Begin with an inspection of the liabilities. Capital and surplus represent sums which need not be paid so long as the bank continues in business. Undivided profits need not be distributed unless the directors choose to declare dividends. Here, then, are \$160,000 of liabilities that need cause the bank no immediate concern. But when we come to the large item of "Demand deposits," we have \$800,000 of liabilities which the bank must be able to meet with cash on demand. We can say at once, with respect to this item, that if the depositors all demanded to be paid simultaneously the bank would be ruined. It could not with the assets listed meet such demands. But it is not a reasonable sup-

position that all the depositors will demand to be paid in full on any one day, or even in a week. If the bank is in a position to pay in cash on any one day as much as ten per cent of its demand deposits, and able to raise additional cash from day to day to the amount perhaps of five per cent of the deposits, it will probably be able to meet all demands for cash likely to be made by its depositors. Incidentally, it should be said that a depositor in effect demands cash whenever he writes a check against his deposit, whether he presents the check directly himself to be cashed across the counter, or whether he uses it in making payments to others. In any event, the bank must in a short time either pay cash for the check or be able to offset it with some cash item, such as checks drawn on other banks.

The item "Certified checks" represents a sum that certainly must be paid shortly, since these checks have been written and will be presented for payment. Time deposits need not be paid upon demand, as the term implies, but may ordinarily be withdrawn after thirty days' notice. Many banks consider it good policy, however, to pay even time deposits upon demand, as a means of maintaining public confidence in their ability to pay, penalizing the depositor perhaps by forfeiture of interest accrued since the last payment. In times of general uneasiness in respect to the banking situation, a refusal by a bank to pay time deposits upon demand may precipitate a run on the bank with ruinous results. The item "Due to other banks" may or may not represent a sum that must be repaid upon demand.

While it has just been assumed that the Bank of Centerville would not in all probability be asked to meet payment on any one day on checks amounting to more than ten per cent of demand deposits, and from day to day not more than five per cent, it should be understood that the ratio between deposits and checks drawn varies with circumstances. In some cities the turnover of deposits is more rapid than in others, and at some times depositors draw checks more freely than at others; occasionally a panic develops when all the customers come running at once to demand all their money, and then, of course, the bank must ordinarily close its doors.¹ Going on the assumption, then, that the Bank of Centerville might be called upon to meet payment of ten per cent of its demand deposits on one day, plus some payments of time deposits and sums due other banks, let us inspect the resources of the bank and observe if it has the means of payment.

The amount the bank may be required to pay, by the assumption made, is 10 per cent of \$800,000 of demand deposits, or \$80,000, plus

¹ Sec. for example, Chart IX on page 632, *infra*.

possibly 10 per cent of \$170,000 of time deposits, or \$17,000, with, let us say, \$5000 of the sum due to other banks, and, of course, the \$2000 specially set aside to meet payment on certified checks. Total, \$104,000.

The bank has in cash \$100,000, and could readily raise the balance required by the sale of some of its bonds. It will get through this day very easily, provided only the cash can be realized on the bonds during the banking hours. But on the following days there will come by our assumption additional successive demands of not less than \$40,000 from demand depositors plus some demands from time depositors. Whence will come the cash to meet these demands? The bank must not only be able to meet these demands, but also build up again its \$100,000 or so of cash reserve in order to be in a position to meet again on some other day unusually heavy payments.

If the bank sold all its government and corporation bonds and collected all sums due from other banks, it would raise only \$140,000, or less than the amount required for four days. Its real estate loans would be practically useless as a source of ready funds. For the real source of funds we must look to the loans and discounts and the inflow of deposits. The bank has short-term loans and discounts amounting to \$805,000. Such loans and discounts should normally run from fifteen days to six months. Assume that in this case the average duration of the loans is fifty banking days, and that they have been carefully distributed as to date of maturity so that one fiftieth of them, or about \$16,000, fall due each banking day. On or before the date of maturity the borrowers would have to deposit in the bank either this much cash or checks on other banks or other cash items, so that these repayments alone would provide the bank with two fifths of the amount assumed to be paid out daily. The other \$24,000 it might receive in the form of deposits other than those made by borrowers for the purpose of paying off loans, such as deposits by salaried and professional men, checks drawn on other banks and deposited in this bank by local business men in the course of their daily business, and in the form of interest on its investments in bonds and real estate mortgages.

The foregoing discussion has shown the close relation existing between loans to retailers and deposits, which grow in large part out of such loans, and also the importance of such loans in providing the bank with the means of meeting payments on checks drawn against it. Additional light may be thrown on these relations by the following example:

Brown, a retailer, has a deposit of \$300 with the Bank of Centerville, and wants to buy \$1000 worth of goods to replenish his shelves. He

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gives the bank his note for \$1000 due in sixty days, which is discounted at 1 per cent, and yields him an additional deposit in the bank of \$990, bringing his total deposit to \$1290. He buys at once the \$1000 worth of goods, paying for them with a \$1000 check, which is promptly presented to the Bank of Centerville for payment by an out-of-town bank which has received it from the wholesaler from whom Brown bought his goods. Charged against Brown's account, this check reduces his balance to \$290. A little later the goods arrive, Brown begins to sell them, and deposits daily in the bank the cash and checks he receives on his sales. By the end of sixty days he has sold the entire new stock, at a mark-up of 25 per cent, and has deposited with the bank a total of \$1250, which brings his deposit up to \$1540. His note now being due, he draws his check for \$1000 in favor of the bank, which deducts that amount from his account and marks the loan paid. Brown's account now stands at \$540. If this represents a typical transaction of the Bank of Centerville, and if it spreads its loans out evenly, the result will naturally be a fairly close balancing of checks drawn against the bank and deposits received in cash or checks on other banks, so that the bank will normally have an inflow of funds sufficient to meet the outflow with something left over to pay its operating expenses and dividends to stockholders. Retailers negotiating loans at the bank in the form of deposits subject to check would, of course, not always draw such deposits out in full at once, but draw them out gradually over a considerable part of the period of duration of the loan. They might also be required to maintain a certain ratio between their deposits and their "line of credit," such as average deposits amounting to twenty per cent of maximum loans.

If the bank, unfortunately, should find itself unable to meet all demands for cash because of poor management or a panic among the depositors, and should have to close its doors and wind up its affairs, the \$150,000 of capital and surplus would serve as a buffer to prevent or lessen losses to creditors of the bank, mainly depositors. The assets would be sold and the proceeds distributed among the creditors; only if anything were then left over would the stockholders recover any part of their investment. Moreover, as already stated, under our banking laws — prior to 1933 — the stockholders would have been subject to an assessment equal to the par value of their stock to make good any losses to the creditors of the bank if the assets were insufficient to make a payment in full. It follows from this that the larger the capital and surplus of a bank relative to its total assets and liabilities, the safer the bank is for depositors and other creditors. The ratio between capital

and surplus and deposits, therefore, bears watching, but even if the capital and surplus is relatively great, it will not guarantee depositors against loss when the bank fails if a very large proportion of its loans and investments prove to be bad and worth perhaps only twenty-five to fifty per cent of their stated value.

10. SOURCES OF THE BANK'S INCOME

Statement No. 4 of the Bank of Centerville indicates pretty clearly the sources of the bank's income and the probable amount thereof, except for such income as the bank may derive from fees charged to its customers for miscellaneous services performed, such as exchange charges, to be discussed later.

Assuming that the items shown in the statement on page 238 represent average amounts of loans and discounts and investments held during the year, and that the rate of discount was 6 per cent, the yield on the government bonds, 4 per cent, the yield on corporation bonds, 5 per cent, and the yield on real estate loans, 7 per cent, and that no interest was received on the amount due from other banks, the loan and investment income of the bank would have been as follows:

<i>Item</i>	<i>Income</i>
Loans and discounts.....	\$48,300
Government bonds.....	1,600
Corporation bonds.....	3,750
Real estate loans.....	4,900
Total.....	\$58,550

Assuming that the bank had other incomes amounting to \$5000, and that its total operating expenses amounted to \$25,000, we arrive at net earnings of \$38,550 available for dividends on stock or to be added to surplus. This represents 38.55 per cent on the original investment of \$100,000 by the stockholders, or 25.7 per cent on stated capital and surplus, a rather handsome showing. Presumably the stock of the bank should have a market value of \$300, or more, since at \$300 a share the earnings would represent 12.8 per cent of the market price.

Although the yield is large on the capital and surplus, or the investment of the stockholders, it is very moderate on the total assets of the bank, the net income amounting to less than 3.4 per cent of total assets, and the total income from loans and investments amounting to only about 5 per cent of total assets. The average yield is cut down by the substantial items which yield no income, and by the low yield on the bonds. By pursuing a less conservative policy the bank could have substantially increased its gross and net income. It could, in other

words, have sacrificed safety for profits. This brings us naturally to a discussion of that index of banking safety called the "reserve ratio."

11. THE RESERVE RATIO

The reserve ratio of a commercial bank, as it is commonly understood, is the ratio to the bank's deposits of the cash on hand plus the amount on deposit with other banks. If, for example, a bank has cash on hand and deposits in other banks amounting to \$125,000, and its own deposit liabilities total \$1,000,000, its reserve ratio is 1 to 8, or, expressed as a percentage, as is the custom, 12.5 per cent. The importance of the reserve ratio lies in this: it indicates the degree of probability that the bank will be able to meet promptly all demands for cash that are likely to be made upon it. Liabilities other than deposits are less likely to result in a sudden demand for cash, and assets other than cash on hand and deposits in other banks may not become available in the form of cash quickly enough to meet an emergency. In some countries, including the United States, a minimum reserve ratio is fixed by law which the banks are compelled to maintain, having, of course, the privilege of keeping a reserve larger than the minimum required by law. Such a legally required minimum reserve ratio may serve a purpose even more important than compelling the banks to have on hand definite amounts of cash; it may, as we shall explain later, prevent the banks from unduly expanding bank credit and thereby facilitating dangerous speculation.

Whether or not the law requires a minimum reserve ratio, the banks in any given community at any given time find by experience that there tends to be a relation between the amount of their deposits and the demands made upon them for cash. If they want to be able to meet all demands for cash promptly, they must not let their reserves fall below a certain percentage of their deposits — this minimum varying with time and place and with the banking habits and business conditions of their customers. It is fatal for a bank to be unable to meet demands for cash for a single hour. Even such a temporary inability to pay would so disturb confidence that depositors would soon come running from all directions in a mad scramble to be the first to recover their money from a weak institution, and this would be likely to cause the failure of the bank even though it had been in sound condition before except for its temporary shortage of cash.

These remarks concerning the significance of the reserve ratio raise at once a number of questions. Should all classes of deposits be treated alike in determining the reserve ratio? What items in a bank statement
' . . . ' be included under the general head of deposits? Are there

other assets besides cash on hand and deposits in other banks which may quickly be turned into cash and used as reserve? In respect to the first question: a larger reserve should properly be carried against demand deposits than against time deposits, provided the time deposits are really of such a nature that they may not be withdrawn upon demand without previous notice. In addition to demand and time deposits, total deposits against which reserve should be kept may include sums due to other banks, and any other item found in a bank statement which actually represents deposits, although not so called in the statement.

In respect to reserves, the item "Checks on other banks" might be added to cash and deposits in other banks to find a given bank's total reserve. But if this were done for all the banks in a country, it would result in an overstatement of reserves, for the reason that we should be counting as reserves both the checks held by the banks on other banks and the cash on hand of the other banks out of which the checks must be paid. Similarly an overstatement of the aggregate cash reserves of all the banks will result from counting the item "Due from other banks" as reserve without offsetting it in each case by the item "Due to other banks." For example, Bank A might have on hand cash to the amount of \$10,000 representing the sum "due to" Bank B. It might count this \$10,000 as part of its cash reserve, while Bank B counted the same sum as part of its reserve under the head of "Due from other banks." On these matters more will be said when we discuss our actual banking system in the United States in later chapters. Meanwhile, let us consider the question of the availability of other assets as reserve.

When we examine the assets listed in Statement No. 4, on page 238, we may readily conclude that the \$40,000 of government bonds as well as the \$75,000 of corporation bonds, if they are sound and have a market value equal to their stated value, represent resources which can be about as quickly converted into cash on hand as the sums due from other banks, and in fact, in some cases, more readily. Such assets are referred to as secondary reserves, and are likely to be as useful in meeting cash demands on the bank as cash itself, provided only that the bank is given a day or two, or in some cases an hour or two, to sell them, and provided, too, that it can find a buyer able and willing to pay cash for the bonds to the amount of their stated value. But, as we shall see later, there come times when buyers may not be found, and the so-called secondary reserves turn out to be no reserves at all.

Consider next how any attempt on the part of the bank to increase its income would tend to reduce its reserve ratio or otherwise weaken its position. It could expand its income either by substituting high-yield

loans or investments for low-yield loans or investments, or by increasing the total amount of loans and investments. It could, for example, sell its \$40,000 in government bonds yielding 4 per cent and invest the proceeds in corporation bonds yielding 5 per cent, but the latter are not so safe as the former and would be more likely to entail a loss if they had to be sold in a time of stress. The bank could sell its corporation bonds yielding 5 per cent and invest the proceeds in real estate loans yielding 7 per cent, but these might not be salable at all in time of stress, and cannot be classed as secondary reserve. Both classes of bonds yield less than the short-term loans and discounts, but both may be required in time of stress as secondary reserves, although, as stated, the corporation bonds might not be found available for this purpose in panicky times. Incidentally, there are times when the bank has funds available but when no eligible borrowers appear, and the money can, therefore, with good advantage be put into corporation bonds temporarily, even though not required for secondary reserves. Other means of investment of funds temporarily idle or required as secondary reserves are represented by bankers' acceptances and commercial paper, both of which will be discussed in due course and need here only be mentioned. Ordinarily, it may be added, these yield an income about equal to that of government bonds, and do not, therefore, represent a method of increasing total net income unless the bank has idle funds which it cannot otherwise lend or invest. It is evident that the bank cannot increase its income without reducing the quality or the desirability of its loans and investments from the point of view of safety, or increasing the amount of its loans and investments.

Consider now the result of increasing total loans and investments. Suppose the bank expands loans and discounts by \$50,000. If it advances these extra loans in cash, it cuts down its reserve ratio sharply by reducing the item "Cash on hand" from \$100,000 to \$50,000. If it advances the extra loans in the form of deposits subject to check, it increases deposits by approximately the amount of the loans and leaves the cash item temporarily unchanged; thus it likewise reduces the reserve ratio, although not so sharply as when the loans are made in cash. In the next chapter will be considered the ultimate effect of such loans on the reserve ratio, which may be the same as if the loans had been made in cash. Similar considerations hold in the case of investments. The bank must pay for investments either in cash or in the form of deposits subject to check. Whichever it does it will reduce its reserve ratio — either it will reduce the amount of its cash or increase the amount of its deposits. It is, in fact, impossible for a bank to expand its loans and

investments without reducing its cash reserve ratio unless it simultaneously and from sources not directly related to these operations obtains an increase in cash or cash items.

It may be concluded from the foregoing discussion that the test of good bank management is the ability to maintain a condition of unquestioned solvency while at the same time building up a profitable business for the stockholders. To be overcautious destroys the chance of good earnings; to be too grasping and reckless means disastrous failure, dragging down to ruin perhaps not only the stockholders, but also the depositors and even the debtors, who may be forced to pay at inconvenient times when the bank winds up its affairs in receivership.

12. BANK NOTES

The Bank of Centerville, which is assumed to be a state bank, could not profitably issue bank notes because bank notes issued by state banks in the United States are subject to a tax of ten per cent, for reasons which need not now be considered. Nevertheless, a chapter on the general nature of commercial banking remains incomplete unless some attention is paid to the function of bank-note issue, since at one time our state banks did issue bank notes, even *ad nauseam*, and our national banks issue them today.

Since bank notes circulate as money and since anything that circulates as money tends to have a glamour of romance surrounding it which tends to conceal its real nature from the general run of men, it is well to emphasize the fact that a bank note is merely a promissory note of a banking corporation, much like the promissory note that an individual borrower gives to the bank when obtaining a loan, but with some important differences. Bank notes represent promises of the banks that issue them to pay to the bearer upon demand the face value of the notes in coin or government paper money. They are usually carefully engraved upon specially prepared paper and difficult to counterfeit successfully. They are ordinarily made payable or redeemable at the counter of the bank that issues them and at one or more other designated places. So long as they remain redeemable at their face value, they circulate as readily as any other kind of money and comparatively few people observe the difference between them and government paper money. Like other paper money they are printed in even denominations, such as \$5, \$10, or \$100, and in common speech, are called "bills."

While from the point of view of the public, bank notes are very much like government paper money, from the point of view of the bank that issues them, they are more like bank deposits subject to check. Like

the demand deposit, they are payable upon demand, and like deposits, they may be used as a means of advancing a loan without at once reducing the bank's cash by the amount of the loan.

How valuable the privilege of issuing bank notes may be to a bank depends upon circumstances, and it is often overrated by those unfamiliar with the nature of banking operations. It is obvious that a bank which may issue its notes has three methods of granting loans — namely, in the form of cash, deposits subject to check, and its own bank notes, which represent cash for the borrower, but not for the bank that issues them; whereas the bank that cannot issue notes has only two forms in which it can extend loans. If borrowers prefer cash in considerable quantities, then the bank with the note-issue privilege can accommodate them more readily than a bank without this privilege. But it must be remembered that the bank which advances loans in the form of its own notes, instead of in other kinds of money, must be prepared to redeem these notes upon demand, and must maintain for this purpose a cash reserve just as it must against demand deposits. Again, although a bank which has the note-issue privilege can, if it desires, pay out its own notes to customers presenting checks to be cashed, and thus temporarily at least conserve its cash reserves, yet these notes may at any time return for redemption, so that the drain on its cash may be merely temporarily delayed.

A further advantage may be gained from the issue of notes. Although the notes are payable upon demand, once they have been placed in circulation, they may pass from hand to hand indefinitely and wander far from home. Some of them may remain outstanding for years, and if this happens the bank gains a real advantage. Suppose, for example, that a bank makes a loan of \$1000 in the form of its own bank notes, accepting its customer's promissory note due in sixty days. The customer pays out these notes in settling his bills and they drift into circulation in other sections of the country and do not return, let us say, for three years. At the end of sixty days the bank receives payment on the customer's note, either in the form of cash or in checks on other banks, the equivalent of cash. Between the time of this payment and the time the notes return for redemption, the bank has the use of the \$1000 which it may lend over and over on short terms for the period of two years and ten months, at, let us say, 6 per cent, and thus enjoy an income of 6 per cent on \$1000 for three years as the result of an original loan for only two months. In short, it may be said that, so long as the bank's notes remain in circulation, it is in effect enjoying interest at the current rate of discount on the total amount outstanding,

this interest, of course, not being derived directly from the notes, but from the funds which it may lend pending ultimate redemption of the notes.

It should be added that, while this appears to open up a royal road to riches for note-issuing banks, the process is not likely to be extremely profitable if the banks are soundly managed and honestly redeem their notes in the end. For one thing, the various banks are in effect competing with one another in supplying the public with currency, and it is to the interest of each bank to send back to the issuing bank any notes that fall into its hands in the natural course of business. By so doing it not only replenishes its own real cash supply, but also removes from circulation temporarily some of the notes of its rivals and makes more room for its own. If all the banks engage in this practice of sending one another's notes home for redemption, each must, as a matter of precaution, maintain comfortable cash reserves for redemption. This reduces the cash reserves it holds specifically against deposits, and reduces, therefore, the amount of loans it may make in the form of deposits subject to check. Moreover, it tends to reduce the time during which its notes remain outstanding to a period little if any longer than the time that elapses between the granting of a loan in the form of a deposit subject to check and the time when the borrower exhausts this deposit by drawing checks against it.

Experience — at least in the United States — has shown that when banks are given the privilege of issuing notes with no restrictions, or without adequate government supervision and control, many banks tend to issue great quantities of notes without making sufficient provision for redemption, employing many questionable devices to get the notes far from home and maintain them in circulation, in a desperate effort to keep them from being presented for redemption. As a result of such conditions, many evils developed which will be considered in later chapters. As a result of abuses arising from such note issues, bank-note issue in this country and elsewhere is now for the most part closely regulated and subject to such restrictions and burdens that it is not a particularly profitable activity for the average bank.

In this chapter the nature of banking operations has been considered primarily from the point of view of the individual bank, and consideration of questions dealing with the operation of a system of banks has been avoided so far as possible. In the following chapter more attention will be paid to relations existing among the various banks of a system of banks, and the discussion will grow somewhat more complicated.

CHAPTER XI

THE LIMITS OF LOAN EXPANSION

1. THE LIMIT OF AVAILABLE FUNDS

THE larger the aggregate amount of loans and investments which a bank can make, the greater will tend to be its gross and net income. Consequently, every bank will desire to expand investments and loans (hereafter we shall use the term "loans" to indicate loans and dis-counts) to the utmost limit consonant with sound banking and safety, and some, unfortunately, a great deal further. But what determines the limit of sound expansion? The amount of investments which a bank can make is for all practical purposes limited only by the amount of funds it has available, since the sum total of available investments is always greater than the sum total of any one bank's funds. But the amount of loans a bank can safely make is limited, not only by its available funds, but sometimes also by the amount of loans desired in its community by eligible borrowers. In most cases, however, a bank will find, in the long run, that the demand for loans from it by borrowers able and willing to give what is considered satisfactory assurance of repayment is well in excess of the amount of its available funds, so that the real limit on a bank's expansion of loans and investments is the amount of its available funds. But what is meant by available funds? If by available funds is meant the amount of cash a bank has on hand at any given time, there are some who would take issue with the statement that loan expansion is limited by such available funds. Some points related to this question are subjects of controversy and must be carefully considered if a vast amount of misunderstanding is to be avoided.

2. TWO EXTREME POINTS OF VIEW

Since the subject of loan expansion is an unusually complicated one and at the same time of utmost importance, an attempt will be made in this chapter to explain the fundamental principles involved with the aid of simplified hypothetical cases stripped of all non-essential and attention-distracting details. If our supposititious cases should seem a bit unreal because of this stripping process, it should be emphasized that the principles discussed tend to operate in the same way in more realistic and complicated cases, but are not so easily discerned.

To begin with, let it be assumed that in the city of Centerville there is a commercial bank, hereafter referred to as Bank A, which has \$200,000 in cash, derived from just two sources, namely, \$100,000 from its stockholders and \$100,000 from depositors, who have made cash deposits to that amount. For the purposes of our illustration it will be assumed that the bank has no other assets or liabilities, and operating expenses will be disregarded. Likewise discounts on loans to be made will be disregarded, and the bank will be assumed to make only loans and no investments. Capital stock remaining the same, there will be no changes in the financial statements of the bank except changes in cash, loans, and deposits, and our attention can be concentrated on the relations existing between these three items.

BANK A

(Statement No. 1)

Cash.....	\$200,000	Capital stock.....	\$100,000
Loans.....	0	Deposits.....	100,000

In Statement No. 1, Bank A is shown to have \$200,000 in cash and \$100,000 in deposits. It has a reserve ratio of 200 per cent. If 10 per cent is considered a safe minimum reserve ratio, the bank is in a position to lend safely in cash \$190,000. Its condition will then be as shown in Statement No. 2.

BANK A

(Statement No. 2)

Cash.....	\$10,000	Capital stock.....	\$100,000
Loans.....	190,000	Deposits.....	100,000

With cash amounting to only \$10,000, or 10 per cent of its \$100,000 in deposits, it could make no more loans in cash without reducing its ratio below 10 per cent until it received more cash from its stockholders, depositors, or debtors. The bank would be, in fact, temporarily "loaned up."

Up to this point we seem not to have entered the field of controversy. Everyone would agree that the limit of loan expansion had been reached under the conditions here assumed. Arithmetic would admit of no other conclusion. But banks also grant loans in the form of deposits subject to check, and it is in connection with such loans that some differences of opinion have arisen on the subject of the limits of loan expansion. The nature of the controversy can best be explained by stating baldly two extreme points of view — more extreme, perhaps, than the actual views of writers who have crossed penpoints in this misunderstanding, to use a mild expression for the failure to see eye to eye in this problem.

THE LIMITS OF LOAN EXPANSION

The first extreme point of view is this: If Bank A has \$200,000 in cash, no loans, and deposits of \$100,000, as indicated in Statement No. 1, it can lend in the form of deposits subject to check the sum of \$1,900,000. This will bring its total deposits up to \$2,000,000, and leave its cash still at \$200,000 as shown in Statement No. 3, and will give it a cash reserve ratio of 10 per cent, the minimum required.

BANK A		
(Statement No. 3)		
Cash.....	\$200,000	Capital stock..... \$100,000
Loans	1,900,000	Deposits..... 2,000,000

The second extreme point of view is astonishingly different. According to this point of view the bank could lend very little if any more in the form of deposits subject to check than it could lend in cash, namely, \$190,000. Writers who hold this point of view invite the reader to use his common-sense in considering this matter; common-sense, they contend, can lead to no other conclusion. Borrowers, they observe, do not contract loans on which interest must be paid unless they intend to use the funds so obtained, and that rather promptly. No sooner will the borrowers have negotiated such loans than they will begin to draw checks against the deposits credited to their account. These checks will quickly be presented to the bank for payment, either by the borrowers or by others to whom they have paid them. If the borrowers themselves present the checks, they will want either cash or a cashier's check, bank draft, or something of the kind. If they demand cash, the bank might just as well have granted the loan in the form of cash in the first place, except that it may have gained a little delay in making payment. If the borrowers want instead a bank draft — that is, an order drawn by Bank A on some correspondent bank in which it keeps part of its cash reserve — its reserve will be depleted at that point, and it might just as well have paid the cash out of its vault.

If the borrowers have paid the checks drawn to other customers of Bank A, these customers will either demand cash for the checks or deposit them to be credited to their own account. If they demand cash, the bank might just as well have paid the cash to the borrowers. If they deposit the checks to their own accounts, they will tend to draw checks more or less promptly against this increase in their accounts, either to pay living expenses, business expenses, or to make investments. These checks need not be traced farther in this analysis, since tracing them would lead to the same conclusions reached in tracing the original checks of the borrowers.

If the borrowers have paid the checks drawn against their own accounts to customers of other banks, they will be promptly deposited by these customers in their respective banks which will quickly present them directly or indirectly to Bank A for payment, and payment to these other banks must be made in cash unless Bank A happens to hold sufficient checks drawn against the various other banks to offset them, in which case the two sets of checks or claims could be used mutually to cancel one another. If Bank A must meet payment on these checks in cash, it might just as well have paid out cash in the first place — the use of deposits has merely temporarily postponed the necessity of making cash payment.

All this reasoning points to a single conclusion: Bank A is likely in all cases except one to be called upon to meet cash payment in rather short order on checks amounting to a large percentage of the total amount of new loans granted in the form of deposits subject to check, and may have to make payment, in fact, on the total amount. Only to the extent that it accumulates checks against other banks in substantial amounts, which it can use to cancel claims against it represented by checks originating from these loans and presented by other banks, can it long avoid paying out practically in full the loan-created deposits. This being true, it is absurd to contend that Bank A can safely expand loans in the form of deposits subject to check to \$1,900,000, or to ten times the amount it could lend in cash, simply because it would temporarily still have a cash reserve of 10 per cent against deposits. Any attempt to expand loans much beyond the amount of \$190,000 would speedily reduce its cash reserve below the minimum and perhaps wipe it out altogether.

If there is no flaw in the reasoning supporting the second extreme point of view, then the argument has demolished completely the case of those who support the first extreme point of view. There is, however, one weak link in the otherwise strong chain of reasoning just presented — is it not possible that Bank A will gain possession of enough checks on other banks or enough cash deposits to meet all claims against it, even though it does expand radically its loans in the form of deposits subject to check? This will bear looking into.

3. CLEARING AND COLLECTING CHECKS — A SIMPLIFIED CASE

Exploring the possibilities of Bank A's capacity to meet demands for payment of checks presented by other banks to it for payment, by counterclaims of the same sort against other banks, requires as a preliminary a discussion of the essential processes of clearing and collecting

THE LIMITS OF LOAN EXPANSION

checks. As heretofore in our discussion it will be advisable to simplify in the interest of lucidity, and our banking system will, therefore, be assumed to consist of only four banks, all located in Centerville, and identified as Banks A, B, C, and D, respectively. It will be assumed, further, that Centerville is a self-contained banking community, and has no banking connections or other monetary relations with the outside world. All checks drawn against any one of the four banks will be assumed to be presented for cash or credit either at the bank against which drawn or at one of the other three. Since most checks are drawn by buyers of goods or services in favor of sellers of goods or services, the terms "buyers" and "sellers" will be used as convenient symbols indicating respectively those who have drawn checks and those who have received them.

The four Centerville banks will be assumed to have formed a clearing-house association and to be operating a clearing-house as the most convenient method of clearing and collecting checks. The advantages gained from the organization of a clearing-house association and the operation of a clearing-house may be explained as follows:

Sellers in Centerville, when they receive payment in checks, might conceivably carry the checks to the four respective banks on which they are drawn, A, B, C, and D, and demand payment in cash or have the checks credited to their accounts. But it will ordinarily be more convenient for each seller to maintain an account with only one bank and to deposit with it all checks he has received, on whatever bank drawn. This saves time and trouble for the seller, but at the end of the banking day it leaves each of the banks in Centerville with a quantity of checks drawn on other banks for which it has given its own depositors either cash or deposit credit. It becomes necessary then for each bank to collect from the other banks the sums due to it as represented by these checks.

One method of collecting the sums represented by these checks, or, to use a briefer expression commonly employed, of collecting these checks, would be for each bank to send a messenger to every other bank with the bundle of checks to be collected, and for this messenger to bring back to his bank in cash the sum collected. Since there are four banks, this method would involve the sending of twelve messengers with twelve bundles of checks who would return carrying through the streets of the city twelve bundles of paper money or bags of coin. The number of messengers required may be ascertained by the mathematical formula $x(x-1)$, in which x represents the number of banks. That is to say, when there are four banks, three messengers must be dispatched

by each of the four banks. Should the number of banks in a city be larger, 50, for example, a very large number of messengers would be required. Fifty times 49 is 2450. This method involves not only a great deal of running to and fro, but also a not inconsiderable element of danger with so many bundles of bills and bags of coin being carried through the streets, along routes and at times well known to the city gunmen. The number of messengers required could be halved, and the amount of money carried through the streets reduced even more if the banks would determine by telephone how much each owed to each of the others, and messengers were then sent out by each bank only to collect the excess due to it, if any, from the other banks. Obviously, if there were a balance due to A from B, there would not be a balance due to B from A, and only one messenger would need to be sent instead of two. But even then the number of messengers required would be large in a city having a considerable number of banks, although with only four banks, as in Centerville, only six would be required.

Consider now how the operation of a clearing-house would simplify the process of clearing. In a large city with many banks the clearing-house might be an imposing structure erected especially for the purpose of clearing and collecting checks, but in a small city with only a few banks, as in Centerville, the clearing-house need be that in name only, and be in actuality only a back room in one of the banks where the representatives of the few banks could meet once a day to carry through the process of clearing and collecting. In a large clearing-house there would be needed a special clerical force and a manager. In a small clearing organization, no special staff other than the regular clerical force of the banks would be required. But the process of clearing and collecting would be essentially the same in all cases.

Every day each bank in the clearing-house association sorts out in bundles the checks drawn on the other banks which it has received from depositors during the course of the day's business. Bank A, for example, makes up three bundles of checks drawn on banks B, C, and D, respectively. The total amount represented by the checks in each bundle is calculated, and at the hour set for clearing, a messenger is dispatched to the clearing-house with the three sets of bundles. When the four messengers from the four banks, A, B, C, and D, respectively, arrive at the clearing-house, each with his three bundles of checks, the stage is set for the process of clearing and collection. This process can be most conveniently explained with the aid of Table II.

In Table II are found the figures representing the amounts of each of the twelve bundles of checks brought to the clearing-house by the

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TABLE II. CLAIMS OF CLEARING-HOUSE BANKS AGAINST ONE ANOTHER
(In thousands of dollars)

		Amounts due from				All banks
		A	B	C	D	
Amount due to	A	..	25	20	15	60
	B	30	..	25	13	68
	C	25	21	..	26	72
	D	27	23	20	..	70
	All banks	82	69	65	54	270

messengers from the four banks. It is assumed that these amounts are in even thousands of dollars. Reading horizontally across the table we find the amounts of the three bundles brought in by each clerk, and the total of these three amounts, which represents the sum due to each of the four banks from all the others. Reading vertically we find the amounts due from each of the four banks to each of the others and the total due from each bank to all the others. For example, the messenger from Bank A has brought in checks drawn against B, C, and D to the amounts respectively of \$25,000, \$20,000, and \$15,000, or a total of \$60,000. The amounts of the checks drawn against Bank A, brought in by the messengers of B, C, and D, are \$30,000, \$25,000, and \$27,000 respectively, or a total of \$82,000.

Now, instead of Bank A settling balances directly with each of the other banks, the total amount it owes to all the other banks, or \$82,000, is regarded as a debt due to the clearing-house, and the total amount due to it from the other banks, or \$60,000, is regarded as due to it from the clearing-house, and Bank A settles, therefore, with the clearing-house by paying to its agent, or manager, the difference between \$82,000 and \$60,000, or \$22,000. When each bank has paid to or received from the clearing-house the balance due, the process of clearing and collecting has been concluded, and with just four payments made, the same number of payments as the number of banks.

To make plainer the calculations involved the sums due to and from the clearing-house may be set down as in Table III.

In Table III we find that the balances due to the clearing-house from A and B respectively are \$22,000 and \$1000, or a total of \$23,000, while the balances due from the clearing-house to C and D respectively are \$7000, and \$16,000, or a total likewise of \$23,000. If, then, A and B pay

TABLE III. AMOUNTS DUE TO AND FROM THE CLEARING-HOUSE
(In thousands of dollars)

	Amount due to or from banks				
	A	B	C	D	All banks
Amount due to the clearing-house.....	82	69	65	54	270
Amount due from the clearing-house...	60	68	72	70	270
Balance due to the clearing-house.....	22	1			23
Balance due from the clearing-house....			7	16	23

what they owe to the clearing-house, the clearing-house will have just funds enough to pay what it owes to C and D. This happy outcome is by no means a mere matter of chance. The total of all the sums due to the clearing-house must of necessity be the same as the total of all the sums due from the clearing-house, since in reaching these two totals we have added together exactly the same sets of figures — the twelve bundles of checks as shown in Table II. If, therefore, it turns out that the clearing-house owes some of the banks more than they owe to it, it must necessarily be true that the other banks owe the clearing-house more than it owes to them, and the balance in the one case must just offset the balance in the other.

If the calculations of the clerks at the clearing-house fail to show this exact balance of claims of the clearing-house against the banks with the claims of the banks against the clearing-house, it becomes obvious that someone has made a mistake and the calculations are repeated until the correct balances are found.

After all the calculations have been made, the messengers from the various banks may carry back with them the bundles of checks drawn against their respective banks which the other messengers have brought to the clearing-house. The checks having been returned to the banks on which they have been drawn, the bookkeepers may deduct the proper amounts from the accounts of the depositors who have drawn the checks, after which the cancelled checks may be filed away for reference by the bank or returned to the depositors when their bank books are balanced.

It is evident from the foregoing account that the clearing-house method of clearing and collecting checks saves a great deal of time and trouble. It reduces the number of payments to be made at each clearing to the number of banks in the association. If the member banks of the clearing-house arrange to keep moderate sums on deposit with the clearing-house, or in some designated bank, no cash payments at all

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need be made from day to day, and no money need be subjected to the risk involved in carting it about the streets. In this case the banks with a balance due to the clearing-house pay simply by drawing a check against their clearing-house account in favor of the clearing-house, and the clearing-house manager draws a check in favor of the banks to whom balances are due from the clearing-house. The result will be that the clearing-house account of some banks will be increased and of others decreased. If any one bank repeatedly has an adverse balance at the clearing-house, it may exhaust its clearing-house account and may then have to build it up again by an actual deposit of cash.

Since the checks drawn in favor of the clearing-house by the member banks must always equal the sum of the checks it draws in favor of them, the clearing-house itself requires no funds other than those deposited with it by the banks, except for the purpose of meeting any operating expenses it may have. Such expenses are met by contributions of the member banks. In the foregoing brief description of the process of clearing and collection, some complications have been avoided by leaving out of consideration the fact that in a real banking situation the members of the clearing-house association would be receiving checks drawn on non-member banks either in the same city or elsewhere, and checks drawn on member banks would also be sent in for collection by non-member banks. How such checks are handled can be explained more conveniently in later chapters.

With the way prepared by this description of the process of clearing and collecting checks reduced to its simplest terms, we may return to a further consideration of the important question of the limits of loan expansion by a member of a system of banks such as our little group of banks in Centerville. In order to bring out as clearly as possible the essential principles involved, we must as heretofore strip our problem of non-essential elements and resort to a number of assumptions which will facilitate discussion without destroying the validity of the conclusions reached.

4. EXPANSION WITH CASH LOANS ONLY

The limits of loan expansion for a system of banks will be considered under three distinct sets of conditions. First, will be considered the limits of loan expansion in a community where people have not become accustomed to the use of checks and in which bank notes are not used. Under these conditions all bank loans may be assumed to be cash loans, and the other two methods of making loans, namely, by means of deposits subject to check and by means of bank notes, will not be

available. Secondly, there will be considered the limits of loan expansion when loans may be made both in the form of cash and in the form of deposits subject to check because the people are accustomed to the use of checks, but not by means of bank notes because the banks do not have the note-issue privilege. Thirdly, there will be considered the limits of expansion when banks do have the note-issue privilege and can make loans in any one of three ways — in cash, in deposit credit, and in bank notes of their own issue.

Our banking system will be assumed to consist of the four banks of Centerville, A, B, C, and D, and neither the banks nor the rest of the community will be assumed to have any financial connections with the rest of the world. As before, operating expenses of the banks, discounts on loans, and other complicating factors will be disregarded, so that our attention may be centered without distraction on the three essential factors of our problem — cash, loans, and deposits — in their relation to one another. One more highly artificial condition will be assumed because it will greatly simplify discussion, and that is that all four of the banks begin with exactly the same amounts of cash, loans, capital stock, and deposits, and no other assets or liabilities. As before, 10 per cent will be assumed to be the minimum reserve ratio. The condition of the four banks will be assumed to be as shown in the following statement:

CONDITION OF THE CENTERVILLE BANKS
(Statement No. 1)

	Cash	Loans	Capital Stock	Deposits
Bank A	\$200,000	0	\$100,000	\$100,000
Bank B	200,000	0	100,000	100,000
Bank C	200,000	0	100,000	100,000
Bank D	<u>200,000</u>	<u>0</u>	<u>100,000</u>	<u>100,000</u>
Total all banks.	\$800,000	0	\$400,000	\$400,000

One further assumption will be made, namely, that after these banks have been organized with \$100,000 in cash paid in by the stockholders, and another \$100,000 in cash deposited by customers, not as checking accounts, but for safe-keeping until they find occasion to use it, there remains in circulation among the people, \$2,400,000, an amount equal to three times the amount of cash held by the banks. All these things being assumed to be true, how many loans can each of the banks make, provided all expand loans at the same rate and receive cash deposits at the same rate? Would the amount be only \$100,000, or many times

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that sum? The reader will recall the argument presented on pages 252-55 about this same question.

We may begin by pointing out that if each bank lent \$190,000 in cash, it would have left just \$10,000, and this would be just 10 per cent of its deposits. The reserve ratio being down to the minimum, the banks could make no more loans until more cash were paid in by the stockholders, depositors, or debtors. But if the \$2,400,000 in cash assumed to be in active circulation is enough to meet the requirements of trade at the existing volume of trade, level of prices, and velocity of circulation of money, the additional cash paid out in loans by the banks will quickly return to them.¹ Assume this to be the case, and that the cash returns in equal volume to all four banks, a not unreasonable assumption, since they are all the same size and have previously received the same amount of deposits and have made the same amount of loans. Each bank will then promptly recover the \$190,000 lent in cash in the form of new cash deposits. Its cash account will then be the same as in the beginning, but its loans and its deposits will both be \$190,000 greater than before. The condition of each bank would now be as follows:

Cash.....	\$200,000	Capital stock	\$100,000
Loans.....	190,000	Deposits.....	290,000

The reserve ratio would now have risen from 10 per cent to 68 per cent, and the banks would be able to grant more cash loans, whether or not the old loans were paid off at once. If the old loans had been made for a period of ninety days or longer, it is probable that the banks would grant many new loans before any of the old loans were repaid, and that the money paid out on the new loans would again return to the banks and be lent once more before either the first batch or the second batch of loans were fully repaid, and that the process of loan expansion could go considerably farther in the same way. The second batch of loans for each bank could amount to \$171,000, its cash reserve being as assumed, \$200,000, and its deposits \$290,000. Against deposits of \$290,000, there would be required \$29,000 of cash reserves, leaving free and available for loans the difference between \$200,000 and \$29,000, or \$171,000. If each of the four banks made loans to the full amount of \$171,000, that much cash would speedily return to the banks for the same reason as before, and the condition of each bank would then be as follows:

Cash	\$200,000	Capital stock.....	\$100,000
Loans.....	361,000	Deposits	461,000

¹ This statement is based upon the reasoning in Chapter IV.

If any part of the first batch of loans had meanwhile been repaid, the cash so received by the bank could have been lent again — leaving in this respect both loans and deposits unchanged.

The question might be raised, Would not some of the depositors during this interval have drawn out some cash from the banks to pay bills? The answer is yes in all probability, but the people whom they paid would have soon returned it to the banks — with a given volume of trade, a given price-level, and a given velocity of circulation, the extra money would be redundant and would return to the banks. If these loans should stimulate trade and cause a rise in prices, the result would be different, and this point will be considered a little later. Meanwhile, assuming that the amount of money outstanding in circulation did not change, and that the amount of money in the banks tended to remain constant, consider what really would be the limit of loan expansion.

If the average duration of the loans made under these conditions exceeded the time required for the cash representing the loans to be paid out into circulation and to return to the banks in the form of deposits ready to be paid out in loans once more, the loans and deposits would both tend to expand, and the limits of such expansion would be reached only when the deposits amounted to ten times the cash reserves. This would mean for our hypothetical banks, A, B, C, and D, when the loans of each had reached the figure of \$1,900,000, and deposits \$2,000,000. When this limit of loan and deposit expansion had been reached the condition of the banks of Centerville would be as indicated in Statement No. 2.

CONDITION OF THE CENTERVILLE BANKS
(Statement No. 2)

	Cash	Loans	Capital Stock	Deposits
Bank A.....	\$200,000	\$1,900,000	\$100,000	\$2,000,000
Bank B.....	200,000	1,900,000	100,000	2,000,000
Bank C.....	200,000	1,900,000	100,000	2,000,000
Bank D.....	200,000	1,900,000	100,000	2,000,000
Total all banks..	<u>\$800,000</u>	<u>\$7,600,000</u>	<u>\$400,000</u>	<u>\$8,000,000</u>

Total cash in circulation.....\$2,400,000
 Bank notes in circulation..... 0
 Checks used..... 0
 Reserve ratio of the banks, 10 per cent
 (\$800,000 divided by \$8,000,000)

Statement No. 2 of the Centerville banks represents what might seem to be a remarkable situation. Despite the fact that the total

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amount of money in the banks and in circulation amounts to only \$3,200,000, the banks have on deposit, as result of cash deposits, no deposits having been created by loans, the sum of \$8,000,000. The banks have made no loans except in cash, yet have loans outstanding amounting to two and three eighths times the total amount of cash held by the banks and in circulation.

The sort of banking just described bears, of course, little resemblance to banking as practiced in modern communities where both checks and bank notes are widely used, but is very much like banking as originally practiced by the goldsmiths in England and the early banking practices in Venice, Holland, and other countries, where the bankers accepted cash deposits for safe-keeping and made loans in a guarded way out of their customers' deposits. The illustration of the cash banking business of the banks of Centerville is, however, of interest, not because it bears a close resemblance to banking as practiced in the distant past, but because it demonstrates that a vast expansion of loans and deposits is possible even without the use of checks and bank notes and without the device of creating deposits by making loans in the form of deposits subject to check. The expansion may even reach proportions endangering the solvency of the banks. It is obvious that the Centerville banks, A, B, C, and D, could not meet the demands of their depositors if the latter came running from all sides and demanded even half of the money they had on deposit, since this would exceed the sum of all the cash the banks had on hand plus all the cash in circulation. To pay off all deposits the banks would have to pass out over their counters two and one half times all the money in the community. Obviously, there would be possible a first class banking panic even though bank notes, bank checks, and loan-created deposits had never existed.

Another question may be raised in this connection — Could such expansion as that represented in the contrast between Statement No. 1 and Statement No. 2 of the Centerville banks be considered inflation? Loans have risen from nothing to \$7,600,000, and deposits from \$400,000 to \$8,000,000. On the other hand, the total amount of currency in circulation plus cash in the banks has remained unchanged. The bank deposits, it must be emphasized, are by assumption not subject to check. An assumption, not previously made, may now be made, namely, that before these four banks were organized \$3,200,000 in cash was in circulation among the people and loans were made by private money-lenders. The organization of the banks caused \$400,000 in cash held by stockholders to be turned into the banks, and brought at once \$400,000 additional cash to be deposited by others for safe-keeping. While

there was not involved in this process any creation of additional currency, there probably was involved some quickening in the circulation of money. Borrowers thereafter might more readily obtain loans and more promptly undertake contemplated business ventures. Under the circumstances the physical volume of trade might increase and prices might rise; both of these developments would be possible with the increased velocity of circulation of money permitted by the organization of the banks and the more general accessibility of loans. Without undertaking now to draw further conclusions in respect to the possible effect on prices and the volume of trade of the organization of the banks in Centerville and their expansion of loans and deposits on a cash basis, let us consider the possibilities of loan and deposit expansion should the banks modernize the banking practice of Centerville by introducing the device of bank checks and make loans in the form of deposits subject to check.

5. EXPANSION WITH LOAN-CREATED DEPOSITS

Let us start out afresh our four banks of Centerville, leaving all assumptions made the same as in the first case, except that in this second case the banks make loans, not in cash, but in the form of deposits subject to check. Each of the four banks is again assumed to be in the position indicated in the statement on page 261, with cash of \$200,000, deposits of \$100,000, and no loans, and with a reserve ratio of 200 per cent. The main point to be considered is this: Could the banks individually and in the aggregate make more loans in the form of deposits subject to check than in cash? Let us see.

Suppose that each bank makes immediately loans in the form of deposits subject to check to the maximum amount possible on a 10 per cent cash reserve basis. This would mean that each bank made loans to the amount of \$1,900,000, and increased its deposits by this amount so that deposits would rise from \$100,000 to \$2,000,000, or ten times the cash reserve of \$200,000. Obviously, if the customers of Bank A now drew checks against more than \$200,000 of these deposits and demanded payment across the counter, the bank would be forced to suspend cash payment. Likewise, if its customers drew checks to the amount of more than \$200,000, and used them in making payments to other persons who presented the checks for payment at the counter, the bank would be ruined. Again, if the checks found their way into other banks and were presented for payment through the clearing-house, and if Bank A had no counterclaims in the form of checks on other banks, it would be forced to admit inability to pay.

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If, however, all banks in the system made loans at the same rate, and if checks were drawn against all the loan-created deposits at about the same rate, and if each bank in consequence received as deposits checks drawn against other banks to about the same amount as the checks which other banks received against it, and if the various customers of the banks were content to accept deposit credits for all checks deposited, and would not demand cash, then neither Bank A nor any other bank in the system would be embarrassed by demands for cash it could not meet. Total deposits of each bank would tend to remain at \$2,000,000, and its cash reserve would remain at \$200,000. Some customers of Bank A would draw checks against their account and thus reduce the deposits with Bank A, but this decrease in deposits would tend to be offset by deposits by other customers of Bank A who had received checks drawn against Banks B, C, and D. So with the other banks in the system.

The results would have been similar if the expansion in loans had been gradual, but in either case expansion would have reached its limit when loans of each bank had reached \$1,000,000 and deposits had mounted to \$2,000,000, if cash reserves had in the meanwhile remained at \$200,000. It might seem, therefore, that the limit of loan expansion for a system of banks in a given banking community would be the same whether all loans were made in the form of cash or in the form of deposits subject to check.

The conclusion that the use of loan-created deposits and the use of checks do not raise the limit of loan expansion of a system of banks is, however, not justified. It will be recalled that \$2,400,000 cash in circulation has been considered necessary to take care of the requirements of trade in Centerville when trade was carried on with cash payments, and that the banks held as cash reserve only the excess cash not required in circulation — in our example \$800,000, or \$200,000 for each of the four banks. But when the borrowers at the banks are induced to take their loans in the form of deposits and to use checks instead of cash in making payments for goods and services bought, the amount of cash required in circulation declines. Both the cash and the substitutes for cash are not required to finance a given volume of trade. It may be assumed, too, that when the borrowers at the banks, with their loan-created deposits, find the use of checks advantageous, other depositors — having made cash deposits — will also substitute the use of checks for cash. Instead of purses stuffed with cash, check-books will be carried about, and in the tills of merchants will be found more checks than cash. With the growing use of checks instead of cash, cash in circulation will become

redundant, and the excess will flow into the banks, causing the cash reserves of the banks to rise. How far they will rise will depend upon the extent to which checks displace cash in circulation, and upon the effect on prices and the volume of trade of the new and additional currency, bank checks, a matter to be considered later.

In tracing through the new development of a redundancy of cash in circulation resulting from the infusion of checks, let it be assumed as a starting-point that the turnover of bank deposits subject to check, or the rapidity of circulation of checks, is such that, compared with the velocity of circulation of money, one dollar in bank deposits subject to check does the same work in trade as one dollar in cash in circulation. Let it be assumed further that all bank deposits are made subject to check and that bank checks replace cash in such large measure that payment by check exceeds payment by cash at the ratio of 6 to 1. On the basis of these assumptions, cash would flow out of circulation into the banks, and cash reserves would rise. If, under all the assumed conditions, the banks then expanded loans to the maximum permitted by the increased cash reserves, loans and deposits might expand until the condition of the banks of Centerville would be as represented in Statement No. 3.

CONDITION OF THE BANKS OF CENTERVILLE
(Statement No. 3)

	Cash	Loans	Capital Stock	Deposits
Bank A.....	\$300,000	\$2,800,000	\$100,000	\$3,000,000
Bank B.....	300,000	2,800,000	100,000	3,000,000
Bank C.....	300,000	2,800,000	100,000	3,000,000
Bank D.....	300,000	2,800,000	100,000	3,000,000
Total.....	<u>\$1,200,000</u>	<u>\$11,200,000</u>	<u>\$400,000</u>	<u>\$12,000,000</u>

Changes from Statement No. 2:

Cash reserves increase from \$800,000 to \$1,200,000.

Loans, increase from \$7,600,000 to \$11,200,000.

Deposits, increase from \$8,000,000 to \$12,000,000.

Cash in circulation, decreases from \$2,400,000 to \$2,000,000.

Reserve ratio, remains 10 per cent.

It should be observed that the expansion of fifty per cent in loans and deposits of the Centerville bank was not made possible *directly* merely by the substitution of loans in the form of deposits subject to check for cash loans, but only by the inflow of cash into the banks as a result of the substitution of checks for cash in circulation. When a bank's reserve ratio is down to the minimum, as in Statement No. 2, it can no more make additional loans in the form of deposits subject to check than

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in the form of cash until by some means it can raise its reserve ratio. The use of bank deposits subject to check in the place of cash, in the ratio assumed of 6 to 1, permitted cash to flow from circulation into bank reserves and bank deposits to expand until cash in circulation was reduced from \$2,400,000 to \$2,000,000, cash reserves of the banks were increased from \$800,000 to \$1,200,000, and bank deposits were increased to \$12,000,000, the latter increase being accompanied by an increase in loans to \$11,200,000. Obviously, this development was a profitable one for the banks, since it increased their income from, let us say, 6 per cent of \$7,600,000 to 6 per cent of \$11,200,000, a little less than fifty per cent.

6. BANK DEPOSITS AND PRICES

Consider next the possible effect of this bank-credit expansion upon business conditions in Centerville. Bearing in mind the assumption that a dollar in bank deposits subject to check does the same amount of work in exchange as a dollar in cash in circulation, we may calculate that in terms of dollars the trade in Centerville must have increased during the expansion of bank deposits almost sixfold, since the total amount of bank deposits subject to check, or \$12,000,000, plus the cash remaining in circulation, or \$2,000,000, aggregates \$14,000,000, which is not quite six times the amount of cash previously in circulation. This increase in the dollar volume of trade might be accounted for either by an increase in the physical volume of production or by a rise in prices, or by a combination of the two. It is improbable that the mere substitution of bank checks for cash and the expansion of the currency by checks would in a short while cause a sixfold expansion in production and trade, just as it is improbable that a similar expansion of the currency through the issue of government paper money would cause an enormous expansion of production. Production is carried on directly by means of land, labor, capital, and management, not by bank checks or government paper money, and only if the extra currency operates to place idle land, labor, capital, and management at work can it promote any substantial increase in production. There is, of course, the possibility that by means of bank loans the available capital, land, and labor may be placed in more capable hands, but there is also the possibility that they will by these means be placed in less capable hands. We must conclude, then, that if in any country such a development should take place as has just been assumed to have taken place in Centerville, the main result would be a great rise in prices, with perhaps some actual increase in business activity resulting from the stimulation of a rising price-level.

The main advantage that would accrue to the people as a whole would be the convenient method of payment afforded by the use of checks instead of cash.

There might be some argument concerning the "economy of gold" if gold had been the money used in Centerville. But it should be observed that there was no economy in gold at all. There was as much gold used in the monetary system after the introduction of check payment as before; although less was in circulation, more was locked up in bank reserves. The higher level of prices required the use, either as bank reserves or in active circulation, of all the gold formerly used.

If, however, Centerville had not been, as assumed, a self-contained community from a monetary point of view, the rise in prices engendered by the growth of the check habit would have caused an increase in imports and decrease in exports, and an unfavorable balance of trade with the outside world which would have had to be settled with gold, just as was the case with Utopia when it began the use of government paper money. Here an advantage for the people as a whole might have been gained. They would in effect have been substituting bank checks for gold, and exchanging the surplus gold for useful goods and services imported from outside the community. To the extent that part of their gold had been exported, however, the maximum possible expansion in bank deposits subject to check would have been less, since the export of gold would have reduced the cash reserves of the banks.

Let us, however, cease speculating on these various matters and proceed at once to consider whether the banks of Centerville, having reached the limits of loan expansion by the use of deposits created by loans and the bank check, can bring about still further expansion by resorting to the issue of bank notes.

7. EXPANSION BY MEANS OF BANK NOTES

The four banks of Centerville, as shown in Statement No. 3, have in the aggregate \$1,200,000 in cash reserves, and \$12,000,000 in deposits subject to check. The people have become accustomed to the use of checks to such an extent that the cash in circulation amounts to only \$2,000,000, or one sixth the amount of bank deposits, but this ratio of 1 to 6 seems to represent the minimum amount of cash required for the proper conduct of business under the existing conditions, cash being required mainly for retail trade transactions and meeting payrolls. Under these conditions further expansion would be impossible unless the total amount of money in the community increased. The banks

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could draw no cash from circulation in order to increase their reserves without reducing the ratio between the cash in circulation and the bank deposits subject to check below the assumed minimum of one dollar in circulation to six dollars in deposits. With the reserve ratio down to 10 per cent and no more cash coming in from circulation, the banks could grant additional loans neither in the form of cash nor in the form of deposits subject to check, since either a decrease in cash or an increase in deposits would reduce the reserve ratio — that is, the ratio of cash to deposits.

When commercial banks have the power, however, of issuing bank notes, they have the power of increasing the amount of money in the community, and the issue of such notes then presents a method of expanding bank credit further after the limits of loan expansion, without note issue, have been reached. Consider now why this is so, and what the limits of loan expansion may be when bank notes are issued.

The degree of expansion when bank notes are issued depends upon the conditions imposed on note issue either by the banking habits of the community or by the banking laws. As a basis of discussion and calculations in our hypothetical example, we shall assume no restrictions on note issue other than a minimum reserve ratio of 10 per cent against notes as well as against deposits. That is to say, it will be assumed that the banks individually and collectively dare not expand credit up to the point where cash reserves will be less than 10 per cent of deposits and bank-note circulation combined.

Reverting to Statement No. 3 on page 267, we note that deposits alone of each of the banks and of all the banks combined are ten times as great as their cash reserves. It is apparent, therefore, that the banks cannot make additional loans in the form of bank notes any more than they can make additional loans in standard money or deposits subject to check, unless they obtain more cash from some outside source or reduce their deposit liabilities, cash remaining the same. One bank might, of course, obtain some cash without reducing the amount of cash in circulation, but only at the expense of some other bank. But how could all banks obtain more cash for their reserves without reducing the amount of cash in circulation below the ratio to deposits assumed to be required? The process is not difficult. Bank notes, if generally acceptable, are money for purposes of circulation. If we assume that the \$2,000,000 of money in circulation consists mainly of gold and gold certificates, the banks need only substitute some of their own notes for this money in order to release some of it from circulation and gather it into their vaults as reserve cash. The process of substitution would be

simple. Each day in the regular course of business the banks would be receiving deposits of cash and paying out cash upon demand to depositors or holders of checks drawn against them. They would then need only mutually to agree to hold all gold or gold certificates received on deposit, and to pay out in response to demands for cash only their own notes, except in those cases in which the customers demanded gold and refused to take bank notes. In a short time the banks would hold most of the gold and gold certificates and would have placed in circulation a corresponding amount of bank notes.

Suppose the banks managed to carry through this process of substitution of their own notes for the gold up to the point where only \$600,000 of the cash formerly in circulation remained in circulation, and all the rest of the \$3,200,000 of cash in the banking community, or \$2,600,000, had been corralled in their vaults as cash reserve. This amount of reserve would represent a 10 per cent reserve for liabilities in the form of deposits and notes combined of \$26,000,000. If the former relation of 1 to 6 between deposits subject to check and money in circulation, including bank notes as money in circulation, were to be preserved, it may be calculated that the combined total of \$26,000,000 in notes and deposits would need to be constituted of notes to the amount of \$3,200,000, all in circulation, and deposits to the amount of \$22,800,000. Assuming that the deposits, notes, cash reserves, and loans were equally divided among the four banks, their condition would now be as given in Statement No. 4.

CONDITION OF THE BANKS OF CENTERVILLE

(Statement No. 4)

	Cash	Loans	Capital Stock	Deposits	Bank Note
Bank A.	\$650,000	\$5,950,000	\$100,000	\$5,700,000	\$800,000
Bank B.	650,000	5,950,000	100,000	5,700,000	800,000
Bank C.	650,000	5,950,000	100,000	5,700,000	800,000
Bank D.	650,000	5,950,000	100,000	5,700,000	800,000
Total all banks	<u>\$2,600,000</u>	<u>\$23,800,000</u>	<u>\$400,000</u>	<u>\$22,800,000</u>	<u>\$3,200,000</u>

Changes from Statement No. 3:

Cash reserves increased from \$1,200,000 to \$2,600,000.

Loans increased from \$11,200,000 to \$23,800,000.

Deposits increased from \$12,000,000 to \$22,800,000.

Notes in circulation \$3,200,000, as against none before.

Reserve ratio unchanged at 10 per cent (now calculated as cash divided by deposit and note liabilities combined).

Cash in circulation, not including bank notes, declined from \$2,000,000 to \$600,000; including bank notes, it increased to \$3,800,000, equal to one sixth the total deposits.

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A few words concerning the relation between the various changes represented by Statement No. 4 will be helpful. The expansion in loans, amounting to \$12,600,000, was made possible only in small part *directly* through the issue of notes. Most of the additional loans were made in the form of deposits subject to check. The note issues served two important purposes in making possible expansion of loans in the form of deposits. First, the substitution of notes for the standard money formerly in circulation to the extent of \$1,400,000 permitted a corresponding increase in cash reserves of the banks. Second, the additional notes issued, amounting to \$1,800,000, supplied the increase in money in circulation required to balance the increase in deposits subject to check and to maintain the ratio of 1 to 6 between cash in circulation and deposits which has been assumed to be necessitated by the business habits of Centerville.

Suppose that only the first \$1,400,000 in notes had been issued in exchange for that much gold and gold certificates gathered into the bank reserves. Suppose that then, without issuing more notes, the banks had proceeded to expand loans in the form of deposits subject to check. The ratio between deposits subject to check and cash would then have risen above 6 to 1, a shortage of cash for retail trade and payrolls would have developed, and the banks would have been called upon to pay back into circulation some of the standard money held as reserves. They would have experienced what is referred to as a drain of cash into circulation — which must always be reckoned with by a system of banks engaged in expanding loans in the form of deposits subject to check. This drain of cash must be sharply distinguished from the drain to which any one bank is subjected when it expands loans more rapidly than the system of banks as a whole. In that case the bank expanding unduly with relation to the other banks loses cash through the clearing-house, and what it loses the other banks gain. But in the present case, all banks in the aggregate lose, while total circulation gains.

The increase in notes and deposits combined amounts to \$14,000,000, and is equal to the increase in cash and loans combined, which is also \$14,000,000. In other words, resources and liabilities have grown by the same amounts. Loans increased more than deposits because some loans were made in the form of notes. Notes and deposits combined increased more than loans, because some notes were exchanged for standard money and thus issued without increasing loans or reducing deposits.

8. BANK INVESTMENT EXPANSION

In the foregoing discussion of the limits of loan expansion, bank investments, for the sake of convenience in exposition, were left out of consideration. The conclusions reached on the limits of bank-credit expansion would not have been materially different if investments as well as loans had been included in the hypothetical case, for the reason already pointed out, namely, that from some points of view a bank loan and a bank investment are quite similar. In respect to the position of the bank's cash reserve, expansion of investments tends to lead to the same results as expansion in loans, except for the fact that investments may turn out to be less liquid than loans and more difficult to turn into cash in case of emergency. If, for example, a bank buys a \$1000 bond from a customer and credits his account with that sum, it has increased its deposit liability in the same way as if it had advanced him a loan in the form of a deposit subject to check. Likewise, if it buys a bond for cash, the effect on the cash reserve is the same as that of a \$1000 cash loan; and if it pays for the bond in its own notes, the effect is the same as if it had made a loan in the form of these notes. In short, expansion of investments has limits similar to the limits of loan expansion. The difference lies in the process of converting the investments into cash in time of need.

9. EFFECT OF UNEQUAL EXPANSION OF CASH LOANS

Up to this point the limits of loan expansion have been discussed on the basis of the assumption that all banks expanded loans and deposits with equal rapidity, and for the purpose of facilitating exposition it has been assumed that all the banks in the system have been uniform in size and have had operations identical in scope and amount. By this simplification of the discussion important banking principles were brought plainly into view unobscured by complicated details. Admittedly the conditions assumed are highly artificial, and some doubt might be cast upon the validity of the conclusions reached. Nevertheless, in the real banking world the same general principles hold true and operate, even though banks are not uniform in size, do not have operations identical in scope and amount, and do not always expand with the same degree of rapidity. The facts that some banks are larger than others and perform more functions need not greatly modify the conclusion reached in this chapter; but we cannot pass by the fact that all banks do not expand with equal rapidity without careful consideration of the results which flow therefrom, because this unequal rate of expansion has a very important effect on the limits of loan ex-

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pansion of the banks individually and of the banks as a system, regardless of whether the loans are made in the form of cash, deposits subject to check, or bank notes.

Consider first the most simple case in which the banks operate on a strictly cash basis, receiving no deposits except cash deposits and making no loans except cash loans. It will be recalled that even under these conditions it is theoretically possible for all the banks in a system of banks to expand loans and deposits until both loans and deposits amount to many times the cash reserves of the banks and even to several times the total amount of money in circulation. If 10 per cent is considered a satisfactory minimum cash reserve ratio, the banks may expand loans until deposits amount to ten times the cash reserves.

But suppose that all banks do not expand loans with equal rapidity. Suppose, for example, that at a given stage in expansion the condition of each of our four Centerville banks is as indicated by the following statement:

Cash	\$200,000	Capital stock	\$100,000
Loans	1,000,000	Deposits	1,100,000

Assume now that Bank A, observing that its cash reserve of \$200,000 exceeds by \$90,000 the required 10 per cent reserve against the \$1,100,000 of deposits, lends at once \$90,000 in cash, bringing its cash reserve ratio down to the minimum of 10 per cent. Assume also that Banks B, C, and D make loans at the same time to the amount of only \$50,000 each. Total new loans, representing that much cash thrown into circulation, amount to \$240,000. Of this extra cash placed in circulation one fourth may be assumed to return in a short time to each of the four banks if they have previously been operating on the same scale. Bank A will, therefore, soon recover part of its cash, but not all of it, only \$60,000, or \$30,000 less than the amount lent. On the other hand Banks B, C, and D will take in \$60,000 in cash deposits as against \$50,000 just paid out, a net gain of \$10,000 each.

The conclusion is that if one bank expands loans more rapidly than the others, it will pay out more cash than it receives in cash deposits, and if it persists in that policy will gradually deplete and finally exhaust its cash reserves. Each bank is limited in its loan-expansion policy by the amount of loans granted by each of the other banks. The loans of any one bank become in part the deposits of others. Under the circumstances assumed, no bank will obtain large deposits unless the other banks make large loans, and no bank can make large loans unless it receives large deposits. With an initial cash reserve of \$200,000, and a minimum cash reserve ratio of 10 per cent, then, Bank A cannot

expand loans and deposits to the amounts of \$1,900,000 and \$2,000,000, respectively, as shown in Statement No. 2 of the Centerville Banks, on page 263, unless Banks B, C, and D are willing to expand at the same rate. The bank which leads the procession in a movement of expansion is likely to fall upon evil days when it will find itself without cash enough on hand to meet the demands of its depositors. Quite similar conclusions will be reached when we consider the effect of an unequal rate of expansion of loans made in the form of deposits subject to check.

10. UNEQUAL EXPANSION OF LOAN-CREATED DEPOSITS

Suppose that at a certain time Bank A, of Centerville, has resources and liabilities as follows:

Cash.....	\$200,000	Capital stock.....	\$100,000
Loans.....	1,500,000	Deposits.....	1,600,000

Observing that it has \$40,000 of reserves in excess of the 10 per cent required against its \$1,600,000 of deposits, the bank acts upon the assumption that it can safely make loans in the form of deposits subject to check to the amount of ten times its excess cash reserves. Rashly making these loans its condition becomes as represented by the following statement:

Cash.....	\$200,000	Capital stock.....	\$100,000
Loans.....	1,900,000	Deposits.....	2,000,000

Cash reserve ratio 10 per cent.

But Banks B, C, and D, which heretofore have expanded equally with Bank A, make new loans at this time of only \$100,000 each, increasing their total loans to \$1,600,000 each and their deposits to \$1,700,000 each. It may be assumed that up to this time and as a result of earlier operations the four banks would find at the clearing-house that their claims mutually offset one another, and so we need to consider here only the immediate results of these new loans of \$400,000 by Bank A and \$100,000 by each of the other three banks.

If the borrowers in a short time draw checks against these new loan-created deposits to the amount of three fourths of the loans — and this is a reasonable assumption — and if these checks return to the four banks in equal proportions — as they will have a tendency to do, since the four banks are assumed to have been operating previously on an equal scale — each bank will receive in deposits as a result of these new loans one fourth of the amount of checks drawn, or one fourth of three fourths of \$700,000, or \$131,250. More than half of the checks received by Bank A as a result of these new loan transactions will be checks drawn against itself, and less than half will be drawn against the other three

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banks combined, whereas, in the cases of Banks B, C, and D, more than half of the checks received will be found to have been drawn against Bank A, because, by assumption, A has made more loans than the other three banks combined.

When these checks are sent to the clearing-house, assuming them to be segregated from checks arising from other transactions, the following results will appear:

Claims of Bank A against each of the other three banks, \$18,750, or one fourth of the amount of checks drawn against the new loan-created deposits of each bank. Total claims of Bank A against the clearing-house, as represented by these claims against Banks B, C, and D, \$56,250.

Claims of each of the other three banks against A, \$75,000, or one fourth of the amount of checks drawn against the new loan-created deposits of A. Total claims of the clearing-house against Bank A as represented by the claims of Banks B, C, and D, \$225,000.

Net balance due to the clearing-house from Bank A as a result of these new loan transactions, \$168,750, being the excess of the claims of the clearing-house against A over the claims of A against the clearing-house. This balance will be paid in cash.

The position of Bank A after this series of transactions, assuming that no other changes had meanwhile occurred in its condition, would be as follows:

Cash.....	\$31,250	Capital stock	\$100,000
Loans.....	\$1,900,000	Deposits.....	\$1,831,250

The figure \$1,831,250 for deposits is the result of the withdrawal of \$300,000 of deposits by the borrowers and the deposits with the bank of a total \$181,250 of checks drawn against all four banks combined.

Obviously, the results of expanding loans in the form of deposits subject to check more rapidly than other banks have been disastrous for Bank A, despite the fact that when these new loans were made they left the cash reserve ratio at first in sound condition at 10 per cent. The resulting unfavorable balance at the clearing-house, depleting the bank's cash supply, cut its reserve ratio down to less than 2 per cent, and this is not quite the whole story. There remain with Bank A \$100,000 of the new loan-created deposits not yet drawn against, which may soon be expected to exhaust its cash entirely and leave it unable to meet its clearing-house balance. Furthermore, there would be the probability that some of the new loan-created deposits would be drawn out in cash directly across the counter by the borrowers or by others to whom the borrowers gave checks drawn against them. Finally, with cash reserves badly depleted the bank would shortly become the subject of

alarming rumors and a run by frightened depositors would be in order.

While in this example the conditions assumed are still highly artificial, they are so close to reality in fundamental respects that the following valid conclusions may be drawn: When any bank in a system of banks, such, for example, as our state and national banks, undertakes to expand loans in the form of deposits subject to check at a more rapid pace than other banks in the system with which it exchanges checks directly or indirectly at the clearing-house, it will tend speedily to deplete its cash reserve. Only if, for some special reason, it enjoys an unusual inflow of deposits not resulting from the loan operations of other banks will its downfall be long delayed. If by superior management, or payment of interest on deposits, or by other means it can attract larger deposits proportionately than other banks, or enjoys such deposits because of the unusual prosperity of its customers, then it can expand loans more rapidly than other banks. Leaving out of consideration such special factors, the power of any bank in a system of banks to expand loans in the form of deposits subject to check is limited by the expansion policy of other banks. Each bank's expansion of loans is dependent upon its expansion of deposits, and its expansion of deposits in turn is dependent upon the loan expansion of other banks. It is useless to argue the question of which comes first, loans or deposits. Expansion of the two in a system of banks takes place simultaneously. Like a man and his shadow, sometimes one seems to move ahead first and sometimes the other, but they never get very far apart.

At this point it is convenient to note the fallacy that the organization of a new bank represents an easy road to fortune because, with a cash reserve of \$100,000 paid in by stockholders, it can quickly make loans in the form of deposits subject to check to the amount of \$1,000,000, the reserve ratio being 10 per cent, and thereafter enjoy an income of 6 per cent of \$1,000,000, or \$60,000 a year, or 60 per cent on the stockholders' invested capital. The new bank just entering the field has no large clientèle of depositors, and if it proceeds to make large loans in the form of deposits subject to check, it will speedily find checks drawn against these deposits coming in for payment from all sides, most of them presented by other banks in the community. Against these checks it will have few offsetting claims in the form of checks on the other banks, and as a result its cash reserve will quickly be exhausted. A new bank operating on the assumption that expansion could proceed in that manner would open its doors one day and close them the next. A new bank, no more than an old bank, can expand at a more rapid pace than the other banks in its system of banks. Until it becomes an established

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institution, it cannot safely make more loans than the sum of its capital subscribed by stockholders plus the deposits paid in by stockholders and friends at the opening. If it is to succeed, it must proceed with extreme caution during its early years.

11. UNLIVEN EXPANSION BY NOTE ISSUE

If bank notes issued by a commercial bank tended to return as promptly for redemption as checks tend to be drawn against loan-created deposits, a bank which expanded note issues and loan-created deposits combined more rapidly than other banks in the system would be likely to find itself in difficulties in a short while, just as truly as if it had expanded at an unduly rapid rate by means of loans in the form of deposits subject to check alone. If, for example, Bank A made new loans in the form of its own bank notes to the amount of \$100,000, while Banks B, C, and D made such loans only to the amount of \$60,000 each, and if these new notes were speedily deposited with the four banks in equal amounts, and if then each bank at once returned to each of the other banks its notes for redemption, the results would be as follows:

Of the \$280,000 in new bank notes issued, \$70,000 would be deposited with each of the four banks. But Banks A, B, and C would each receive on deposit \$25,000 of A's notes, while A would receive only \$15,000 of the notes of each of the other three banks. When these claims were offset against one another, either at the clearing-house or at the banks' counters, Bank A would have to pay on balance to each of the other three banks \$10,000 in cash, and would thus lose \$30,000 of its cash reserve, assuming that its other operations were such that it lost or gained no cash on some other account. If it persisted in its policy of issuing proportionately more notes than the other banks, it would finally exhaust its cash reserve.

The fact that each bank in a system of banks has a selfish interest in promptly sending back for redemption in standard money any notes of other banks that fall into its hands does tend to bring about a steady return flow of its bank notes to any bank that issues them. It is to the interest of each bank to ask other banks to redeem their notes promptly, as pointed out in the preceding chapter, because by so doing it not only replenishes its own cash reserves, but makes room for more of its own notes in circulation, and so long as its own notes remain in circulation it receives, in effect, interest at the current rate on the amount in circulation.

Nevertheless, for various reasons bank notes may not be returned promptly to the bank that issues them. The notes may be sent far from

home or they may circulate in the community in which issued for a long time before being deposited in a bank. The banks may even enter into a "gentleman's agreement" not to ask one another to redeem their notes, but instead to pay any such notes out into circulation instead of cash or instead of their own notes, on the assumption that in this way all the banks concerned would be able to inject a larger quantity of their notes into circulation through interest-bearing loans and postpone longer the necessity of redemption. For these various reasons any one bank in a system of banks may expand loans by means of note issues more rapidly than other banks with greater impunity than it may thus expand loans in the form of deposits subject to check. The time of reckoning will come, however, sooner or later, not only for the banks which have expanded most recklessly, but for all the banks in the system if by means of collusion in postponing redemption they have issued notes beyond the limits of safety and have maintained inadequate cash reserves.

12. CONCLUSIONS ON LIMITS OF BANK-LOAN EXPANSION

We have considered now the limit of bank-loan expansion under three sets of conditions — when banks make loans only in cash, when they make loans in the form of deposits subject to check as well as in cash, and when they make loans in the three forms of cash, deposits subject to check, and bank notes. We have seen that the banks in a system of banks could theoretically bring about a great expansion of loans and deposits while making no loans and receiving no deposits except in the form of cash, and that bank deposits and bank loans might amount to several times the total amount of cash in the community, and that the amount of loans, swelling with the deposits, would be limited only by the cash reserves of the banks together with the minimum ratio of cash to deposits. If the minimum cash reserve ratio were 10 per cent, loans might expand with deposits until deposits amounted to ten times cash reserves, and loans were approximately the same.

We have seen, further, that the use of checks and loans in the form of deposits subject to check can increase the lending power of the banks only by permitting the banks to add to their cash reserves cash displaced from circulation by checks, the cash reserve ratio remaining the same. The extent of loan expansion permitted by loan-created deposits depends upon the degree to which cash is released from circulation and flows into the bank reserves. Finally, we have seen that the use of bank notes permits a further expansion of bank loans primarily for the reason that the bank notes may be substituted for part of the cash remaining in

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circulation, which may then be added to the bank reserves affording a basis for an expansion of bank deposits and bank notes combined beyond the expansion possible without the use of notes. In short, it is not the loan-created deposits nor the bank notes in themselves that permit the loan expansion, but the displacement of the cash formerly in circulation by bank checks and bank notes and its coralling in the banks as additional cash reserve. The more complete the displacement of cash from circulation and the larger the proportion of cash rounded up in the bank reserves, the greater becomes the possible expansion of bank loans.

13. ADVANTAGES OF BANK-CREDIT EXPANSION THROUGH LOAN-CREATED DEPOSITS AND NOTES

The advantages gained by a community or a country from the expansion of bank loans through the use of checks, loans in the form of deposits subject to check, and bank notes are probably not so great as is commonly supposed or as often implied by those writing on the subject of money and banking. For the bankers themselves there is the unmistakable advantage that these devices make it possible for them to conduct their business on a larger scale with resulting enhanced earnings. For Bank A, of Centerville, it was obviously more desirable to carry loans of \$5,950,000, the limit of expansion with the aid of checks and notes, than to carry the smaller amount of loans of \$1,900,000, the limit when loans were on a cash basis. If, however, this expansion results merely in a larger number of banks competing for the larger business instead of a smaller number competing for the smaller business, even the bankers may not reap any great advantages from the process of expansion.

As for the general public, it is not clear that it gains more than it loses from this process of loan expansion made possible by the substitution of checks and bank notes for standard money, such as gold or gold certificates. If the expansion of loans and the growing use of checks and bank notes is spread over a long period of time and permits a large volume of business to be done at a stable price-level, whereas otherwise a falling price-level might develop, the public presumably gains from the stability of prices. Likewise, if some expansion can be encouraged at a time of depression and abnormally low prices, such expansion may hasten the revival of business and the return of prosperity. If, on the contrary, the expansion of loans, deposits, and bank notes is rapid, and generates a rising level of prices accompanied by the evils of speculation, it presumably does more harm than good; and there is reason to believe that such expansion is more likely to cause a rise in prices than it is to prevent

a fall in prices. It is precisely as fallacious to confuse the expansion of bank credit with the expansion of wealth as to confuse the creation of government paper money with the creation of wealth. Multiplying promises to pay will not *per se* multiply goods and services, whether the promises to pay are in the form of greenbacks or in the form of bank deposits subject to check and bank notes. Yet there are many who can see nothing but good in bank-credit inflation, while they see nothing but evil in government-credit inflation.

If the bank-credit inflation raises prices in proportion to the amount of the additional credit granted, it will not even give to the borrowers in the aggregate a greater command over goods than they would have with more moderate borrowing in the form of cash loans from the banks.

It may be argued that when banks make loans in the form of deposits subject to check or bank notes, and make these loans mainly to business men for productive purposes, they place a larger proportion of the buying power of the community in the hands of the business men than the latter otherwise would hold, and thereby direct the flow of labor, land, and capital to productive purposes, encouraging the accumulation of capital rather than encouraging the consumption of consumers' goods. Whatever validity there is to this argument depends upon the assumption that the use of loan-created deposits and bank notes by the banks permits these business men to obtain larger loans relative to the price-level than they would get without the creation of such loan instruments. It is, indeed, often implied by this argument that without such *bank credit* there would be *no credit*—and no loans to business men. It is, of course, a fallacy to confuse the instrument of credit with credit itself. A loan is still a loan, even though made in the form of gold coin instead of a bank note or a deposit subject to check.

Equally fallacious, as previously indicated, is the argument that the use of bank credit in the form of deposits subject to check and bank notes economizes gold, as this argument is often understood. In our hypothetical example of the four banks of Centerville, the development of deposits subject to check and bank notes resulted in no economy of gold at all. We started with \$3,200,000 of gold in circulation and in the banks, and we wound up with the same total amount of gold, only a larger proportion had been corraled as bank reserves when the banks substituted bank checks and bank notes for most of the gold in circulation.

The use of bank deposits subject to check and bank notes may permit some degree of economy in the use of gold, just as the use of government paper money may permit such economy, as explained in our chapter on Government Paper Money in Utopia. In a country or banking com-

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munity not isolated from the rest of the world, expansion of bank deposits and bank notes to a degree sufficient to raise prices tends to increase imports and to decrease exports of goods and thereby to lead to exports of gold to cover the unfavorable balance of trade. When this takes place, gold is really economized because the country now gets along with less gold, using the cheaper substitutes, bank notes and bank deposits.

Likewise, if all countries having banking systems develop the use of bank deposits subject to check and bank notes, and by the expansion of these instruments cause a rise in prices, they will divert labor and capital from the production of gold, now become less valuable, to the production of other things. The world as a whole, then, would economize on gold, using cheaper instruments of exchange as substitutes. It is, of course, a gross fallacy that the use, say, of \$50,000,000,000 of bank deposits saves the use of the same quantity of gold. Concerning the possibilities of economizing gold through the use of the gold-exchange standard and the gold-bullion standard, employed by various countries in recent years, and through the use of managed currencies, something will be said in a later chapter. In this connection it need hardly be mentioned that, when a country departs completely from a metallic standard and adopts an irredeemable paper standard, it achieves the most complete economy in the use of gold that is possible, but it has always in the past eventually proved to be an unwise economy — penny wise and pound foolish.

It is in other directions that we must look for the real advantages which the general public gains from the use of bank checks, bank deposits subject to check, bank notes, and other related credit instruments. The advantages of bank checks over cash as a means of making ordinary business payments have already been enumerated. These advantages could obviously not be realized if banks did not employ the device of bank deposits subject to check. The public gains no corresponding advantage from the use of bank notes if there is available some desirable form of government paper money, such as gold certificates. But there are possible advantages to be realized from an "elastic currency," and elasticity may be more readily imparted to a bank-deposit and bank-note currency than to other forms of currency. In interregional and international trade the bank draft, a check drawn by one bank on another, is a convenient instrument in making payments and is of great advantage to the general public.

Concerning the advantages of bank-credit instruments in effecting interregional and international payments, and as devices employed in

imparting elasticity to the currency, we shall have more to say in later chapters. Here we need only add in concluding this phase of our discussion that the bank check, the bank deposit subject to check, the bank draft, and the bank note are extremely useful instruments, but the advantages derived from their use should be clearly distinguished from the expansion of bank credit which accompanies their use. The latter is an incidental by-product of a useful institution, and probably on the whole does more harm than good.

CHAPTER XII

DOMESTIC EXCHANGE

1. INTERREGIONAL AND INTERNATIONAL PAYMENTS

IN THE two preceding chapters devoted to the discussion of the nature of commercial banking and the limits of loan expansion, consideration of the services which banks perform for their customers in connection with interregional and international payments was purposely avoided. In order to attain to as great a degree of lucidity as possible in the exposition of the fundamental principles of banking, an isolated banking community was assumed, having no banking connections with the outside world. It was observed that in that hypothetical banking community the banks performed important services relating to payments for goods and services bought and sold within the community. These services consisted in the main of accepting deposits subject to check, or bank making loans in the form of cash, deposits subject to check, or bank notes. The loans, it was noted, were made primarily to local business men to assist them in the purchase of merchandise for their stores or raw materials for their factories or to meet payrolls, and permitted them thus to carry on business on a larger scale than would otherwise have been possible. The deposits subject to check, whether created by loans or otherwise, afforded the people in the community a most convenient method of paying by check, far superior to payment with actual cash.

But the isolated condition assumed to represent the position of Centerville is a highly artificial one. In advanced industrial countries such as the United States, there is no locality of any commercial importance whose citizens do not have frequent occasion to make or receive interregional payments, and in every advanced industrial country there are many communities which participate in international trade and whose citizens make or receive international payments during the regular course of their business. Moreover, many persons who are not directly engaged in business nevertheless often are under the necessity of making payment of sums due in other regions and in other countries. Since all commercial banks in the United States and other similarly developed countries participate in the making of interregional payments, and a large number of them participate also in making international payments, a discussion of the principles of banking remains incomplete if no

consideration is given to methods by which such payments are made and the services which banks perform in this connection.

The subject breaks up naturally into two divisions — the first dealing with interregional payments and the second with international payments. Each of these two divisions may again be divided, one of the subdivisions dealing with payments made immediately or within a few days and the other dealing with payments at some more distant time in the future and involving more distinctly than the first the extension of bank credit. The various kinds of credit instruments used in making interregional and international payments are commonly referred to as "exchange." Exchange is of two main varieties, domestic exchange, used in interregional payments, and foreign exchange, used in international payments. The present chapter will deal with domestic exchange, and the following chapter with foreign exchange.

2. THE NATURE OF OUR INTERREGIONAL TRADE

It is hardly necessary to enter into a detailed discussion of the reasons why persons living in one part of the United States have payments to make in other parts. Yet it will do no harm to point out a few elementary facts concerning our commercial geography and our geographical division of labor. To a considerable extent our industries are localized. Shoes, for example, are manufactured largely in New England, although there are great shoe factories also in New York, Missouri, and other states. Consequently a Mid-Western shoe retailer replenishing his shelves is likely to have a payment to make in New England. Again, cotton cloth is produced mainly in New England and in some of the Southern States, notably North Carolina. Merchants dealing in cotton cloth will ordinarily then have bills to pay in New England or the South. The great wheat markets of the country are in Chicago, Minneapolis, Kansas City, Omaha, and a few other grain centers. Millers stocking up on wheat will, therefore, be likely to have bills to pay in these primary grain markets. The grain dealers in turn must pay local grain dealers in the wheat belt, notably in Kansas, Nebraska, and the Dakotas, who buy directly from the farmers. Exporters of raw cotton from New York or cotton manufacturers in New England may have bills to pay in the great cotton market of the South — New Orleans. Fruit dealers in all parts of the country buy fruit from the Pacific Coast regions and must make payment there. So in all parts of the country, manufacturers, wholesalers, retailers, and others are constantly under the necessity of paying for goods bought in other sections — a necessity compelling them to use some form of domestic exchange or to ship the actual cash.

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3. FORMS OF DOMESTIC EXCHANGE: THE CHECK

The most common forms of domestic exchange are the ordinary bank check drawn by a depositor on his bank, the bank draft, the post-office money order, the express money order, the commercial draft, the trade acceptance, and the bank acceptance. In general, although not in every specific case, all these forms of exchange represent orders drawn in one city for definite sums of money payable by some person, firm, bank, or postal clerk in some other city, or orders payable locally which will be accepted for sums due to the payee in some distant place. The bank check, the post-office money order, and the express money order are drawn payable at sight or upon presentation at the bank or post-office on which drawn. The bank draft and the commercial draft may be payable at sight or at some specified future date. The trade acceptance and the bank acceptance are ordinarily used only when payment is to be deferred for some time.

The most convenient and simple way for anyone who has a checking account with his local bank to make a payment in a distant city within the United States is to draw a check and mail it to the payee with no more formality or expense than addressing, sealing, and stamping the envelope in which it is sent. Since the check is made payable only to the order of the payee and will not ordinarily be cashed without his identification and endorsement, it is not necessary to take the trouble of registering the letter or otherwise insuring it against loss. Letters are rarely lost in our mails when sent to the home or the regular place of business of the addressee, and even if lost, the check would be valueless to anyone but the payee. However, when a check for an abnormally large sum is sent, ordinary prudence would suggest that it be sent by registered mail. Checks, however, are not legal tender and can be used as domestic exchange only when the payee is willing to accept them in payment of obligations due to him. As our banking system is now organized, good checks drawn on any bank in the United States will usually be accepted at their face value in any part of the country, no matter how distant from the drawee bank. A good check is one drawn by a *bona-fide* depositor on a solvent bank. The payee will accept such checks because his local bank will accept them in turn, either giving him cash or crediting his account with the amount of the check. His bank will be willing to do this because it will be able to collect the sum with negligible trouble and expense from the drawee bank under our present system of clearing and collection of checks organized on a national scale under the Federal Reserve System, later to be described.

4. MONEY ORDERS

If a person does not have a checking account with a bank or for some other reason finds it impossible or inconvenient to use a check in making a distant payment, he will find the post-office money order a convenient method of remitting sums not in excess of \$100. State officials with their hands tied by red tape may, for instance, refuse to accept personal checks in payment for automobile license fees, but will accept post-office money orders. Although post-office money orders are familiar to most persons, it will do no harm, and may help to clear up some confusion, to describe briefly the essential nature of the operations involved in the use of these orders.

Suppose that A. W. Johnson, of Clarence, Missouri, having no checking account with a bank, has occasion to make a payment of \$57 to W. H. Brown, of Abilene, Kansas, and is familiar with the use of money orders. He goes to his local post-office, fills out an application blank for a money order of \$57 payable to W. H. Brown, of Abilene, Kansas, and hands this to the clerk. The latter will then write out the order in three parts. One of these is merely a memorandum given to the sender acknowledging receipt of the \$57 and to be used by the latter in case of failure of the order to be delivered. It is extremely rare that the sender has occasion to use this slip. The second part is the order itself, which the sender places in an envelope to be mailed to the payee. The third part is a stub retained by the local post-office as a record of the order sent. Upon receipt of the order delivered into his hands, the sender must pay the amount of the order and in addition the stipulated fee, which ranges from a minimum of 6 cents for orders up to \$2.50 to a maximum of 22 cents for orders from \$80.01 to \$100. For the order of \$57, Johnson pays a fee of 18 cents.

That part of the order placed in the envelope and sent to Brown will read substantially as follows:

The postmaster at Abilene, Kansas, will pay to W. H. Brown \$57.

When Brown receives the order he may present it at his post-office and, upon being identified, will receive his money. Should he be at some other city when he receives the order, he need not carry it to Abilene, since it is payable within thirty days at any post-office in the continental United States, Alaska excepted. He cannot endorse it without restriction as one may a check, and thus transfer the right to receive the money to any other party. He may, however, endorse and cash it at his bank.

Should Johnson have desired to remit to Brown, not \$57, but \$557,

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the operation would have been made more inconvenient by the rule that no post-office money order may be sent in excess of \$100. Johnson, because of this rule, would have been compelled to have six orders made out, five for \$100 each and the sixth for \$57, and the total fees would have amounted to \$1.28. This is one of the disadvantages of the post-office money order as a form of domestic exchange. Other disadvantages have already been indicated, namely, that the payee must be identified in accordance with the rules and regulations of a government department, and that he must himself present the order for payment, either at the post-office or at his bank, which may at times prove inconvenient.

How the Post-Office Department can receive money at one office and make payment on an order at any other office represents no great mystery. At each office funds accumulate from the sale of stamps, money orders, registration of letters, etc. Also money is being paid on money orders presented for payment and in meeting other obligations. Since the money all belongs to the Government of the United States it makes no difference whether one office ends the day with \$57 less while another office ends the day with \$57 more. The two sums offset one another. The Government in fact gains in such money-order transactions not only the fee paid, but the use of the money between the time the order is sold and the time it is cashed, and sometimes such payment is delayed for months and years — some persons using money orders as a means of hoarding less dangerous than hoarding actual cash.

Should, however, an excessive number of orders be sold at one office and an excessive number cashed at another office, the government funds at the first would grow in amount and at the second be depleted to the extent that the Government either would have to resort to shipment of actual cash or employ some such form of exchange as the bank draft to build up its funds in the office at which the drain had occurred.

Express money orders, issued by a private corporation, the American Railway Express Company, and by banks and other firms acting as its agents, are much like post-office money orders, but in some respects more convenient. The sender is not required to make out a written application, but merely tells the clerk what he wants. The express orders are payable to anyone upon endorsement and not only directly to the payee himself or a bank. The American Railway Express Company, like the Post-Office Department, has offices in all parts of the country, and the sums received for orders in one office offset the sums paid out at others, where the orders are paid. When a surplus of funds accumulates in one section while a deficiency develops elsewhere, the company

may ship actual cash, for which it has good facilities, or it may resort to the use of bank drafts or other forms of exchange.

5. THE BANK DRAFT

When a large sum is to be sent to a distant city in the United States and for some reason the personal bank check is not acceptable, the bank draft is a most convenient form of exchange. The bank draft may be most simply described as a check drawn by one bank on another with which it keeps a deposit. The average country bank does not maintain deposits in many banks scattered over the country, but is likely to have a deposit with at least one bank in New York City, and may have deposits in one or more banks in other financial centers. There are various reasons for maintaining such deposits, one of which is the capacity it gives the bank to draw drafts against them for the convenience of its customers and for its own profit. When payment is to be made by means of a bank draft, it is not necessary for the draft to be made payable in the city where the payee resides. A draft drawn on one of the large banks in New York City is acceptable ordinarily at face value by any bank in the United States, for the reason that most banks are eager to obtain such drafts to be sent to New York for the purpose of building up their own accounts with their New York City correspondent bank. A bank is a correspondent of another bank, it should be said, when it regularly performs services of some sort for the latter, the relations between a bank and its correspondent bank being much like those between a depositor and his bank.

If, therefore, Claude Spiker, of Morgantown, West Virginia, desires to make payment by bank draft of \$1000 to H. E. Knowlton, he may use a New York draft regardless of whether Knowlton resides in New York City or Atlanta, Georgia. He will purchase from the Bank of Morgantown a \$1000 draft, drawn on its New York City correspondent, say the Chase National Bank, and send this to Knowlton wherever he may be, and the latter may have it cashed at practically any bank in the United States at face value, upon being identified to the satisfaction of the bank's teller. Spiker could pay for the draft, if he were a depositor at the Bank of Morgantown, with a check drawn against his account. In some cases banks make no charge for drafts, and in others a small charge is made. When no charge is made, the buyer of the draft pays only its face value; if a charge is made, he pays a small premium, say, a flat charge of ten cents, or perhaps ten cents per \$100. In any event, the charge for exchange will be less on a bank draft of \$100 or more than on a post-office or express money order of the same amount.

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The Bank of Morgantown cannot, of course, persistently sell drafts drawn against its New York funds without replenishing these funds in some way. It may maintain its account with the Chase National by sending to it for collection checks received on other banks, by itself purchasing from other banks drafts on New York or other financial centers and remitting them to the Chase National or by remitting actual cash. It would not use post-office or express money orders because of the trouble and expense involved.

A bank draft drawn by one bank on another is no better than the bank which draws it. If that bank fails before the draft is cashed, it may become worthless. It then represents a claim against an insolvent bank. It is a mistake to assume that a draft drawn on the Chase National Bank is as good as that bank. In the case of a check drawn by a bank on another bank, just as in the case of a check drawn on the Chase on a bank, it is the financial integrity of the drawer of the check, and not that of the drawee, that must be given primary consideration. Nevertheless, a bank draft is usually considered a better type of credit instrument than a personal check, and is more likely to be accepted at its face value without question, since the bank drawing the draft is more likely to be known to the payee than the ordinary writer of a personal check.

6. THE COMMERCIAL DRAFT

A commercial draft is an order drawn by a business man or firm against another business man or firm, directing the latter to pay to the former or a third party a sum of money. It differs from a bank draft, which is an order drawn by one bank on another, and from a check, which is an order by a person or firm on a bank. A commercial draft, like a bank draft, may be an order to pay at sight or at some definite future date.

While a check is ordinarily made payable by the drawer to some third party to whom a payment is due, the commercial draft is most commonly an order made payable to the drawer himself by the drawee in settlement of some commercial obligation. For example, John Doe, of Brockton, Massachusetts, a shoe manufacturer, may have sold to Richard Roe, of Dayton, Ohio, a retailer, \$1000 worth of shoes and may desire immediate payment. Instead of waiting for Roe to send him a check, Doe may draw a draft against him reading substantially as follows:

To Richard Roe
Dayton, Ohio.

At sight pay to the order of myself one thousand dollars.

John Doe.

If Doe simply placed this order in an envelope and mailed it to Roe, it would be little more than a dun couched in rather discourteous language, unmitigated by any polite phrases. Even worse, possibly, would be the procedure of turning the draft over to a bank to be collected from Roe, unless the latter had given his consent to this method of payment. Not only would this probably anger Roe, but he would be under no compulsion to honor such an order to pay. A more effective method of using the commercial draft to advantage would be for Doe to attach to it the bill of lading received from the railroad or other transportation agency which had shipped the shoes, and then either to sell the draft with the bill of lading attached to his local bank or to turn it over to the bank for collection — the proceeds to be credited to his account. The bank would send the draft with the bill of lading attached to its correspondent bank in Dayton for collection, and the latter in turn would present the draft to Roe for payment. If the Brockton bank had no correspondent bank in Dayton, it would probably have a correspondent which did have a correspondent there, or under the present system of collection operated by the Federal Reserve System, the draft could be collected through the Federal Reserve Bank of Boston, in a manner later to be explained.

Without the bill of lading attached to the draft, Roe could not obtain possession of the shoes after they arrived in Dayton, and without paying the draft, he could not get the bill of lading.¹ He could thus be compelled to honor the draft as a condition of securing delivery of the shoes. If he had ordered the shoes from Doe with the understanding that they would be delivered only under these conditions, he would have no reason for objecting to the procedure, and this is, in fact, a common way of handling shipments of commodities such as cotton, wheat, and corn, and other merchandise in the United States.

It may save the reader some confusion if he notes particularly that when the commercial draft is thus used, the seller of the goods draws the credit instrument and either sells it to his local bank or turns it over to the bank for collection. He either obtains cash from the bank or is credited, when the draft is collected, with a deposit equal to the value of the draft. The local bank in Brockton, in the example used, thereby either reduces its cash in Brockton, or increases its deposit liabilities, while it increases its deposit with the correspondent bank that collects the draft for it. If a federal reserve bank is utilized as the collecting

¹ In this case an order bill of lading, not a straight bill, would be used. The carrier would not surrender the shipment without presentation of the order bill of lading properly endorsed.

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agency, the Brockton bank increases its account with the federal reserve bank.

On the other hand, if in such a case payment is made by Roe, of Dayton, taking the initiative in sending a bank draft to Doe in Brockton, Roe buys the draft from his local bank either for cash or by drawing a check against his account with the bank in favor of the bank. The Dayton bank thereby either increases its cash in Dayton or reduces its deposit liabilities by the face value of the draft plus the exchange charge, if any is made, while it reduces its deposits with its correspondent bank against which the draft is drawn. Quite similar results would follow for the bank in Dayton if Roe, instead of paying for the shoes with a draft bought from the bank, paid for them with his personal check drawn against the bank. In this case the bank's deposit liabilities in Dayton would be reduced when the check came back to it for collection and was charged to Roe's account. But the bank would be compelled to remit payment for the check to the Brockton or other bank which had sent it in for collection. If it made this payment with a New York bank draft, it would thereby reduce its deposit with its New York correspondent by the amount of the draft.

7. BANKS AND EXCHANGE

But regardless of what method were used — check, bank draft, or commercial draft — and regardless of whether Doe, the seller, took the initiative in collecting, or Roe, the buyer, took the initiative in paying, it would always remain true that the payment for the shoes shipped from Brockton to Dayton would be sent from Dayton to Brockton, and the immediate result would be that the Brockton bank would build up its account with its correspondent bank or its federal reserve bank, while the Dayton bank would reduce its account with its correspondent bank or at its reserve bank. In any event, too, the Brockton bank either would reduce its cash reserve at home or increase its deposit liabilities and the Dayton bank either would increase its cash reserve at home or reduce its deposit liabilities.

What, then, would either bank gain from the transaction? If Roe's bank in selling him a bank draft makes a charge for exchange of, say ten cents or more, this exchange charge represents its most obvious gain. It receives for the draft, let us say, \$1000.10, or more, and suffers a reduction of its deposits with the correspondent bank against which the draft is drawn of only \$1000. But there is another element of gain. It receives at once the \$1000.10 in cash or reduces at once Roe's account by that amount if he has paid for the draft by check, but its own account

with its correspondent bank will not be reduced until the draft has reached that bank for collection. In effect, it gains the use of \$1000 for a period of one or more days. Similarly, if it makes an exchange charge, as most banks formerly did, and as some still do, by refusing to "remit at par" on checks sent to it for collection, it may pay only \$999.90 or less on the \$1000 check drawn by Roe when it comes back for collection, directly or indirectly, from Doc's bank in Brockton. Here also it will make a gross gain of ten cents or more, having charged Roe \$1000, but having paid out less. The grounds for making such charges will be discussed later in this chapter. In this case, also, it will gain the use of \$1000 for a short time, since it charges this amount to Roe at the date on which the check is returned, but its own account with its correspondent will not be reduced until the draft it remits to Doc or his bank is collected.

Consider next the case of the Brockton bank — the bank of the seller. If it buys his draft drawn against Roe in Dayton, and advances at once cash or deposit credit to Doc, it loses the use of that amount of money until its own account is credited at its correspondent bank when the latter collects the check. The Brockton bank then ordinarily either will not advance cash or credit to Doc until it has received payment for the draft itself, or it will grant immediate credit, but discount the draft at the current rate for the estimated time of collection. In the latter case it makes a gross gain of the amount of the discount, and the process represents in effect a loan to Doc for this length of time. Similarly, if Doc receives payment by draft or check sent in by Roe, the Brockton bank either will not advance cash or credit to Doc until it has collected, or it will charge interest on the amount during the time required for collection. The question of what happens if the Dayton bank refuses to remit at par on the check drawn by its customer Roe and sent to Doc requires separate discussion and will be considered in our next section dealing with the clearing and collection of checks.

8. CLEARINGS AND COLLECTIONS — THE OLD METHOD

In the preceding section the use of the various forms of domestic exchange was considered primarily from the point of view of the buyers and sellers of goods rather than from the standpoint of the banks concerned. References were made to various problems of collection of checks and drafts, but various important points were dismissed without adequate explanation. In the present section the process of clearing and collection will be described in more detail, with particular reference to the problems encountered and the obstacles overcome by the com-

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mercial banks of the United States before the whole system of clearing and collection was revolutionized and made much simpler and tremendously more efficient by the machinery of the Federal Reserve System inaugurated in 1914.

It would in a way be more logical to postpone consideration of this subject until we reach our chapters on the national banking system, under which the old system of clearings and collections was operating in its clumsy way, and our chapters on the Federal Reserve System, under which the new system has operated with marvelous efficiency. But certain fundamental principles concerned with interregional as well as with international clearing and collection of checks and drafts are not directly tied up with any particular system of banking, and there are advantages in discussing these principles in a compact form in a single chapter, freed as far as possible from intermixture with discussion of the details of particular banking systems.

The old system of collection to be described briefly in this section represents a method used when no special provision had been made by law in the form of a national clearing organization for the interregional clearing and collection of checks and drafts on a national scale. A similar system would develop in any advanced industrial country with no centralized banking machinery such as is represented by our federal reserve banks and the Federal Reserve Board. The new system is typical of the efficiency that may be achieved by any centralized system of clearing and collection for which definite provision is made by legislation. The old system bears more similarity to the present system, or lack of system, of international clearings and collections, therefore, a good system, and a discussion of the old system represents, therefore, a good preface or introduction to the discussion of foreign exchange and international clearings and collections. The new system, to be discussed in the next section, throws some light on what might be accomplished by the establishment of a properly organized international clearing-house, of which the Bank for International Settlements at Basle, Switzerland, is, perhaps, a beginning.

We may begin this part of our exposition by pointing out that the use of any form of exchange represents an attempt to avoid the expense and trouble of the shipment of gold or other money by the use of credit instruments. The Government solves this problem for some persons in connection with some payments by the use of the post-office money order, and the express money order represents another partial solution. It is only because no other agency has wholly solved the problem that the banks have been enabled to step in and perform a service for other

at a profit to themselves in providing both domestic and foreign exchange instruments.

Before the establishment of the Federal Reserve System, the banks in the United States had built up a great network of correspondent bank relations primarily for the purpose of clearing and collecting checks and drafts, although the correspondent banks performed other services for one another. Practically every commercial bank in the United States either had a correspondent bank in New York City, the financial center of the country, or had made arrangements with some other bank by means of which it could utilize the services of the other bank's New York correspondent. Many banks had correspondents not only in New York, but also in one or more other financial centers of the country. To distinguish them from the banks in the financial centers the other banks may be called country banks, a term which has long been applied to all banks in the United States located outside of the comparatively small number of cities specified under the National Banking Act as reserve cities or central reserve cities.

9. EXCHANGE CHARGES

With their correspondent banks in New York City, and in many cases with correspondent banks in other financial centers, the country banks kept deposits. Against such deposits they could draw drafts which were useful for two primary purposes, namely, to sell to their customers who desired to make payments in distant cities by bank draft, and to remit as payment for checks drawn upon the banks by their customers and sent in from out-of-town banks for collection. Whether the country banks used the drafts for the one purpose or the other, they might realize a net gain from the process. As already indicated they might make a small exchange charge for drafts sold, either a flat charge per draft, or, more likely, something like one tenth of one per cent of the face value of the draft. In the case of the checks coming in for collection, they could remit in payment a draft for perhaps one tenth of one per cent less than the face value of the draft. In either case they would receive from the customer more cash or deduct more from his account than the amount of the draft they themselves drew against their own account with the correspondent bank.

This charge for exchange they could justify on the following grounds: the customer paid the bank in local funds; the bank in providing the customer with a New York draft, or by permitting him to use his local check in making a payment in any part of the country, provided the customer, in effect, with cash in any part of the country. It saved him the

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expense of shipping cash, and deserved payment for this service. Moreover, there was not only the value of the service to the customer to be considered, but the cost of the service to the bank. To maintain its deposits in the New York bank and perhaps in other centers involved tying up funds which it might otherwise have employed in making loans and investments.

The argument of cost of service was somewhat weakened by the fact that the banks in the financial centers were so eager to obtain deposits from the country banks that they paid a moderate rate of interest on such deposits; and it was further weakened by the fact that federal and state banking laws, which required the banks to maintain certain minimum cash reserve ratios, permitted the banks, within limits, to count deposits with correspondent banks as part of their cash reserves. Obviously, if the bank had to hold this cash, anyway, and by depositing it with correspondent banks could obtain interest on it, not much validity was left to the argument that the deposits represented a cost which must be covered by the charge for exchange. There were, however, other costs involved in the sale of drafts and the collection of checks — costs of the clerical labor, stationery, postage, etc. — and these alone justified some charge for exchange. In business, as in politics, the arguments which are most used to justify policies are not necessarily those which are most logical and sound, but those which will carry most weight considering the limitations in intelligence and information of the audience at whom they are directed.

When the country bank drew drafts against its New York correspondent bank, it naturally reduced by the amount of these drafts its deposit with that bank, but there were various methods by which it could restore its balance and usually with negligible expense. For example, the country bank would receive from its depositors checks or drafts drawn on out-of-town banks which it could send to its New York correspondent for collection — the correspondent bank crediting the country bank's account with the amount collected on these checks. The country bank might also in many cases buy commercial drafts from its customers payable in New York or other financial centers, and send these in to its correspondent bank for credit. In these ways, or by other methods, any country bank could, without much trouble or expense, maintain ample deposits in New York to take care of the collection of its own checks and cashing of its own New York drafts.

10. THE ROUNDABOUT METHOD OF COLLECTION

Thus far the process of clearing and collection has been viewed only from the point of view of the country bank. Consider the subject now

from the point of view of the banks in New York. The great New York banks had numerous correspondent banks in all parts of the country, including both country banks and banks in other financial centers. When these correspondent banks and the New York banks' other depositors turned in for collection checks on various banks scattered over the country, the New York banks naturally desired to collect these checks at par if possible. As already indicated, country banks were in the habit of making a charge for exchange on checks sent in for collection, remitting perhaps only \$999 for a \$1000 check. This charge for exchange would not be justified and would not be likely to be made if the checks were presented to the country banks for payment by some neighboring bank rather than by some New York bank. Therefore, the New York bank receiving a check for collection drawn on a Dayton, Ohio, bank, for instance, not its own correspondent, would send this check to its correspondent bank in Dayton instead of directly to the drawee bank. The correspondent bank could then collect the check through the Dayton clearing-house, at par, and credit the account of the New York bank with the face value of the check. The correspondent banks of the New York bank might make it a condition of collecting checks at par that the New York bank maintain deposits with them.

Naturally, even a large bank could not keep deposits with banks in every corner of the country, and maintain correspondent relations with banks in every city, but such a bank would have correspondent banks, which had other correspondent banks, which in turn had other correspondent banks, and so on, in practically every part of the country. Out of this network of correspondent relations grew the so-called roundabout or circuitous method of check collection. The New York bank, receiving for collection a check drawn on a bank in a locality where it had no correspondent bank, would send the check with a bundle of other checks to a correspondent bank in some other section with whom it had an account it desired to build up. By this bank that particular check would be sent on to some other bank with whom it had correspondent relations; and so the check would travel from city to city, and gradually arrive at its ultimate destination — perhaps after a period of a week or ten days or more. But then the process of collection would just be begun. The drawee bank would pay the neighboring bank that presented the check to it directly or through the local clearing-house. That bank would credit its correspondent bank, which in turn would credit the correspondent bank next in line, and so on back to the New York bank in which the check had first been deposited for collection. All this hounding of the check from pillar to post, or chasing

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around Robinson's barn, it should be emphasized, was for the purpose of avoiding the exchange charge of perhaps one tenth of one per cent of the face value of the check — the New York bank having desired to credit its depositor in full for the check to retain his good-will, and not having desired to absorb itself the charge for exchange.

When by this literally devious device the New York bank avoided the exchange charge that might otherwise have been made by the drawee bank, it merely gained what the other bank lost. There was no net saving for the banking community as a whole. On the contrary, there was a net loss, for it was obviously more costly to send the check home and to remit credit in turn by the circuitous route than by the direct route. The cheapest and most direct route would have been for the New York bank to send the check directly to the drawee bank, or, if it desired to save postage and clerical labor, to send this particular check with a number of others drawn on banks in the same locality to one of the banks to be collected from others through the regular local clearing-house operations.

Not only was a great deal of clerical labor unnecessarily expended in this roundabout process of collection, but considerable delay was involved. If a check was sent in succession through the hands of a half-dozen banks, and remittance was relayed in the reverse direction over the same route, it was perhaps two weeks before the New York bank finally received credit for the check collected. Naturally, if it credited the account of the depositor at once with the face value of the check when the check came into its hands, while it received credit for the check itself only after an interval of two weeks, it in effect lost the use of the funds for that period, or, in other words, it made an advance without interest to the depositor. To escape the burden of such non-interest-bearing loans, the collecting banks in New York and some other cities entered into agreements to make a charge to their depositors for collection of out-of-town checks. This charge, while burdensome, was less than the customary deduction for exchange made by out-of-town banks when remitting directly.

In some measure, if not altogether, this interest charge to the depositors was offset by the following circumstances: If business men receiving checks drawn on out-of-town banks had to pay for the delay in collecting them, they also benefited from the fact that checks which they themselves drew against their own accounts when sent to distant payees were slow in returning for collection, and did not involve a deduction from their checking account for some time. Likewise, if banks had to pay for delay in the collection of checks they received on other banks,

they gained in somewhat the same measure by being able to postpone payment on checks drawn against themselves. From the social point of view, then, the real loss from the roundabout and inefficient system of collection was represented by the waste of labor and stationery. So far as exchange charges and interest charges involved were concerned, the losses and gains in large measure cancelled one another, but some parties doubtless gained more than they lost, while others lost more than they gained. But, despite all the defects of this system, it must be remembered that after all the banking system provided a method of making out-of-town payments cheaper and more convenient than shipping cash or buying of government money orders. In the absence of a better system it was economically justified by the fact that its service was worth more to the banks' customers than it cost — otherwise they would have been unwilling to pay the bill.

11. CLEARING AND COLLECTION — THE NEW SYSTEM

With the establishment and development of the Federal Reserve System methods of clearing and collecting out-of-town checks have been revolutionized. Detailed consideration of the form of organization and functions of the Federal Reserve System must be postponed to later chapters, but a brief description of those features of the system that pertain directly to the clearing and collecting of checks may advantageously be given here. Under the Federal Reserve Act of 1913 twelve federal reserve banks were established, one for each of the twelve federal reserve districts. The location of these banks and the boundaries of the districts are shown on the map on page 485. Under the provisions of the law about one third of all the commercial banks in the country became member banks of these federal reserve banks.

The significance of this relation between the reserve banks and the member banks, so far as the present discussion is concerned, lies in the facts that the member banks must keep all their legally required cash reserves in the reserve banks of their respective districts, that the member banks may borrow money from the reserve banks, and that the reserve banks function as clearing-houses for the member banks of their district. The federal reserve bank of each district thus becomes in effect the correspondent bank of every member bank in its district. Moreover, the twelve federal reserve banks are correspondents of one another, clearing and collecting checks and drafts on a nation-wide basis. To facilitate this operation the "Gold Settlement Fund" was devised, consisting of a deposit of many millions of dollars in gold belonging to the

reserve banks individually in the United States Treasury at Washington, D.C., under the supervision of the Federal Reserve Board.

Every commercial bank in the country, whether a member bank or not, can, if it desires, send checks received by it drawn on other banks in any part of the United States, to the federal reserve bank of its district for collection, non-member banks making use of this service keeping a special clearing and collection account with the reserve bank. When a check is received for collection by the reserve bank, it adds the amount of the check to the account of the bank which has sent it in, and deducts the amount from the drawee bank if the latter is a member bank or a non-member bank with a clearing account with the reserve bank. If the drawee bank has no account with the federal reserve bank against which the item may be charged, it may be asked to remit New York exchange or other satisfactory exchange, or cash, to the reserve bank by mail. The credit of the bank sending in the item will, however, be deferred by the reserve bank according to a fixed schedule until a sufficient time has elapsed theoretically to communicate with the drawee bank by mail, and likewise the account of the drawee bank will not be charged with the item for this length of time. The time during which the credit is deferred varies, of course, with the distance of the drawee bank from the reserve bank. On this basis the reserve bank neither gives nor receives credit on checks or drafts collected until such credit is theoretically due.

Under the Federal Reserve System of clearing and collection, local checks are still cleared and collected among banks in the same city in the way illustrated by our little hypothetical clearing-house in Centerville described in the preceding chapter. But practically all checks and drafts drawn by banks in one city on banks in other cities are cleared and collected through the federal reserve banks. Each federal reserve bank, as already indicated, serves as a clearing-house for the out-of-town checks of the banks in its district, and except for the factor of distance and the deferred credit resulting therefrom, the process of clearing for the whole district, covering in most cases several states, and in some cases hundreds of thousands of square miles of territory, is essentially the same as the local clearing process in a single city through a local clearing-house.

Just as a bank clearing its local checks through a city clearing-house will have as the result of each day's operation a sum due either from or to the clearing-house, so a bank clearing through the reserve bank will have a sum due either from or to the federal reserve bank. Its account with the reserve bank will thereby be increased or decreased by the

amount of this balance. If its account because of persistent unfavorable balances becomes depleted, it will have to take measures to build it up, the nature of which need not here be considered. If, on the other hand, by persistent favorable balances at the reserve bank its account grows larger than required, it may withdraw some of the funds and lend or invest them. Incidentally it may be remarked that undue expansion of loans and investments by a bank clearing through the federal reserve bank will tend to give it an unfavorable balance in the reserve bank clearings just as truly as it will in its local clearing-house operations.

12. INTER-DISTRICT CLEARING

We come next to consider the clearing and collection relations among the twelve federal reserve banks themselves. It will frequently happen, of course, that a bank in one federal reserve district will receive a check drawn on a bank in another district. A Kansas City bank may, for example, receive a check drawn on a New York City bank. In that case the check would be sent by the Kansas City bank to the Federal Reserve Bank of Kansas City for collection, and the Federal Reserve Bank of Kansas City would send the check in turn to the Federal Reserve Bank of New York, which would charge the check to the account of the New York bank on which it was drawn, while crediting it to the account of the Federal Reserve Bank of Kansas City, which in turn would credit it to the account of the bank which had sent it in for collection. For the two commercial banks concerned, the process of clearing and collection in such cases is no more difficult than when both banks are in the same federal reserve district. But such interregional or inter-district operations involve the giving and receiving of credit among the federal reserve banks, so that in the interest of efficiency they require a clearing-house of their own, and this they developed as previously indicated, in the form of the gold settlement fund.

The gold settlement fund had consisted in recent years of several hundred millions of dollars in gold belonging to the individual reserve banks and deposited in the United States Treasury under the supervision of the Federal Reserve Board, and on November 29, 1933, the amount of gold in the Gold Settlement Fund as reported by the Governor or the Federal Reserve Board was \$673,403,000. Under the provisions of the Gold Reserve Act of January, 1934, however, title to this gold passed to the United States Government and the reserve banks received in exchange for it an equal number of dollars in gold certificates. The Gold Settlement Fund thereby became the Gold Certificate Settlement Fund. Each day each reserve bank telegraphs by private wire to the

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settlement agent of the Federal Reserve Board the amount it owes to every other federal reserve bank. These amounts are entered on a clearing-sheet essentially the same in principle as Table II in the preceding chapter illustrating the clearing-house operations of our hypothetical four banks of Centerville. From these figures are determined the net amounts due to or from each bank. If the Federal Reserve Bank of Kansas City, for example, owes in the aggregate to the other eleven reserve banks \$1,000,000 more than they in the aggregate owe to it, the settlement clerk deducts that amount from its account in the settlement fund. Naturally, for reasons already described in the preceding chapter, the unfavorable balances of the reserve bank which have such unfavorable balances as the results of a day's operations will be exactly equal to the favorable balances of the others in the aggregate. The total amount in the settlement fund need not vary from day to day, but the amount of gold certificates to the credit of each reserve bank varies from day to day. Each reserve bank must maintain an account in the settlement fund large enough to meet easily any adverse balances it may have as the result of clearings from day to day. How the banks acquired all their gold will be explained in a later chapter.

Under this method of clearing and collection through the reserve banks and the settlement fund, in which practically all commercial banks in the country participate directly or indirectly, the roundabout method of check collection with its excessive cost and delay has practically disappeared. Checks and bank drafts and other similar credit instrument are now cleared and collected with marvelous celerity and at a minimum of expense to everyone concerned.

13. TELEGRAPHIC TRANSFER OF FUNDS

The old system of correspondent banks has not been entirely displaced by the new system of clearing and collection. Banks still find the services of correspondent banks useful in various ways, although no longer required in clearing and collection, and many banks still maintain deposits in banks other than the reserve banks. For such banks the new system has devised an additional convenience — the telegraphic transfer of funds without cost. If a large bank in Kansas City, for example, desires to increase its deposit with, say, the Chase National Bank in New York by the amount of \$100,000, it may request the Federal Reserve Bank of Kansas City to deduct this sum from its account, and to wire the Federal Reserve Bank of New York to credit the account of the Chase National Bank with that amount. Through the member banks of the reserve system, their customers may be given

the same privilege, so that it is now possible both for banks and private individuals to transfer funds across the continent practically instantaneously and without cost. This applies, of course, only to customers of banks who desire to transmit substantial sums, and this service is not available for small-change transactions.

It should be understood, of course, that such telegraphic transfers do not involve the moving of actual cash. When one reserve bank telegraphs another to credit a bank in its district with \$100,000, the former will on the same day transfer to the latter that amount from the settlement fund in Washington — a mere bookkeeping operation. In other words, there are actually in such a case three local transfers of money or credit — (1) from the Kansas City bank to its reserve bank; (2) from the Federal Reserve Bank of New York to the Chase National; and (3) from the gold certificate settlement fund account of the Federal Reserve Bank of Kansas City to the gold certificate settlement fund account of the Federal Reserve Bank of New York. As a result of these clearing, collecting, and telegraphic transfer operations, no cash must actually be transported, unless the account of one of the reserve banks in the settlement fund becomes depleted or exhausted and must be replenished, and even in that case expedients can be found to avoid the actual shipment of gold certificates. In short, the present system has almost completely eliminated the necessity for shipment of money from one section of the country to another, as well as the delays and expenses involved in the roundabout collection of checks and drafts.

14. THE NEW SYSTEM AND EXCHANGE CHARGES

The fact that banks are thus able to collect checks and drafts promptly and without cost through the federal reserve banks and that they are not compelled to maintain special deposits as a means of collecting checks has practically destroyed the argument of the banks in support of an exchange charge. It has become practically a matter of indifference to a bank whether checks drawn against it are used in payment of local obligations or are sent out of town and returned to it for collection through the federal reserve bank of its district. Certain bookkeeping and other clerical labor involved in such check transactions represents some expense, but so does the labor involved in connection with local check transactions. It has become just about as reasonable to make a charge for all checks cleared as for out-of-town checks. Most banks have, therefore, given up the practice of deducting exchange on out-of-town checks, and member banks of the Federal Reserve System are prohibited by the federal reserve banks from making such charges.

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Only a comparatively small number of non-member banks cling to the custom of charging exchange on out-of-town checks, and these are in danger of being regarded as outcasts of the banking community. Their excuse is that such charges have always represented an important source of income for them, and that without this income they cannot profitably continue operations. Their attitude is not particularly logical nor their position a happy one.

Since checks can now generally be collected promptly at par, they are so generally acceptable for all sorts of transactions that the bank draft is no longer so necessary as formerly, and banks find it difficult to make an exchange charge on drafts. Rather than pay the exchange charge, the bank's customer would use his personal check, even though he might otherwise prefer the bank draft. Thus the disappearance of the exchange charge on checks has also tended to cause the disappearance of the similar charge on drafts, although some banks still make such a charge. The prompt collection of checks and drafts has also reduced the necessity for a charge made by banks to cover interest on the items in the process of collection, and has cut down the time during which interest is charged when such charges are still imposed. In the aggregate the new system saves the country many millions of dollars annually; and this is not merely a saving to the banks' customers at the expense of the banks. While the customers pay less and the banks get less; the expenses of the banks have also been reduced in large measure, and the gain of the customers represents, therefore, in large part a net gain from the social point of view. This saving in exchange charges is one of the great benefits conferred upon the country by the Federal Reserve System.

15. THE RATES OF DOMESTIC EXCHANGE

It has been indicated that all forms of exchange represent devices employed to avoid with the aid of these credit instruments the expense and trouble involved in the shipment of gold or other kinds of money. Since this is true, it is obvious that the maximum premium over par that a buyer of exchange would be willing to pay ordinarily for a bank draft or other form of exchange would be, in a gold-standard country where gold was available, the cost of shipping gold. Likewise, the maximum discount below par that a seller of exchange would be willing to accept on his draft would be the cost of sending the draft to its destination and having the gold shipped back.

Under our present system of clearing and collection, it rarely becomes necessary to ship cash, but under the old system gold was frequently

shipped back and forth between our various financial centers, notably from New York, the financial center of the whole country, to Chicago, the financial center of the Mid-West, or from Chicago to New York. The cost of such shipments was about fifty cents per \$1000. Under the circumstances bank drafts on New York would not ordinarily be sold in Chicago at a rate higher than that represented by \$1000.50 for a \$1000 draft, nor bought at a rate lower than that represented by \$999.50 for a \$1000 draft, because at a rate higher than this the large banks with facilities for shipping gold would be eager sellers, forcing the rate down, and at rates lower than this they would be eager buyers, forcing the rate up.

The so-called basic rate of domestic exchange, which must be distinguished from the special charges made by the banks as previously discussed, tended to move up and down with the total demand and supply of exchange at the various centers and the necessity or probability of the necessity of shipping gold. In the autumn, for example, unusually large quantities of farm products would be shipped from West to East, and more drafts would be drawn on New York and offered for sale in Chicago than were being bought in Chicago as a means of making payments in New York. The Chicago banks would thereby suffer a depletion of their funds at home and build up a surplus in New York. As this condition developed, they would become less eager to buy drafts and more eager to sell, in order to avoid the necessity of shipping gold from their surplus in New York to make up their deficiency in Chicago. Thus, the rate on New York drafts in Chicago would fall, until, if it finally became necessary to ship in gold from New York, the rate would be \$999.50, below which it would not go. Similarly, during other seasons the excess payments might be reversed in direction, and the banks, being in danger of being compelled to ship gold to New York, would sell drafts less eagerly and buy more eagerly until the rate would rise to \$1000.50 when it actually became necessary to ship gold.

After the establishment of the federal reserve system of clearing and collecting checks and drafts, a temporary seasonal excess of payments East or West resulted merely in an excess due from some federal reserve banks to others, and the balance due could be settled by a bookkeeping operation involving only the transfer of gold from the gold settlement fund account of one reserve bank to the account of another, and no actual shipment of gold was required either by the reserve banks or the member banks. The seasonal fluctuations in the basic rate of exchange of our various financial centers on one another ceased to exist. Thus, all three factors tending to cause exchange to sell at a point other than par

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— namely, interest charges, exchange charges, and gold shipments — ceased to operate in whole or in large part, and in large sums dollars in New York were thereafter worth no more and no less than dollars in any other city in the United States. It still remains true, however, that when Tom, Dick, and Harry want to send \$15.60, or some such sum, to a distant point, they may pay exchange charges in the form of fees on express or post-office money orders; that some banks still make charges on bank drafts, and deduct exchange charges on out-of-town checks; that telegraphic transfers of money made by private parties through the Western Union or Postal Telegraph Systems can be made only at the cost of the telegram plus a special charge varying with the amount of money sent.

We may now turn to the second main subdivision in our discussion of domestic exchange — the part dealing with payments to be made, not immediately or within a few days, but at some more distant time in the future.

16. THE COMMERCIAL TIME DRAFT AND TRADE² ACCEPTANCE

In a great many commercial transactions the buyers are not in a position to make immediate payment with their own funds and the sellers are not able or willing to wait until the buyers have funds available of their own. Under these conditions commercial banks through their services make it possible for the buyer to postpone payment for a time out of his own funds while the seller obtains payment at once or within a few days. One method of achieving this desirable end has already been considered — the method of the bank discount or loan to the buyer. Two other methods may now be considered which not only involve the extension of bank credit to business men, but involve also the use of credit instruments in the form of domestic exchange, the subject primarily under consideration in this chapter. The first of these two methods to be discussed is one that involves the use of the commercial time draft and the trade acceptance.

The commercial time draft is just like the commercial sight draft except that, instead of being an order by one business man or firm upon another to pay to the first or a third party a definite sum of money at sight or on presentation of the draft, it is a similar order to pay a definite sum of money at a given future date, as sixty days after date or sixty days after sight.

If, for example, our Brockton shoe manufacturer, John Doe, whom we have previously considered in a commercial sight-draft operation, should find that Richard Roe, the Dayton retailer, could not pay for

\$1000 worth of shoes he desired to buy until after two months, he might draw a time draft against Roe as follows:

August 31, 1932

To Richard Roe
Dayton, Ohio

Sixty days from date pay to the order of myself one thousand dollars.

John Doe

This draft, together with an invoice for the shipment of shoes and the bill of lading received from the railroad company for the shoes, Doe might place in an envelope and mail it to Roe with the request that the latter accept the draft and return it. Roe would accept the draft by writing across it in the proper space the word "Accepted" and sign his name. What had been before merely a time draft would now have become a trade acceptance. Its acceptance by Roe would have made of it a piece of two-name commercial paper — a promise to pay, in effect, which both Richard Roe and John Doe were legally under obligation to honor, provided Doe himself endorsed it and sold it to a third party.

Roe, having accepted and returned the draft to Doe, the latter might take it to his bank, which would discount it, or buy it, just as it would his promissory note. It would be, in effect, a promissory note signed by Richard Roe and endorsed by John Doe. It would be the direct obligation of Roe to pay, and, if he failed to pay, it would become the obligation of Doe. Whether or not this trade acceptance would represent a better type of paper than the ordinary promissory note signed by Roe and endorsed by Doe is a debatable question which can be more conveniently discussed in a later chapter. The point of main interest here is that, by discounting this trade acceptance at his local bank, Doe would promptly realize payment on his shipment of shoes, while Roe would not be under obligation to pay until sixty days after the draft was drawn. Meanwhile, the Brockton bank would have a time draft in the form of a trade acceptance which it could hold till maturity and then send to its federal reserve bank or some other correspondent bank for collection, by methods previously discussed, or it could sell it at once with its own endorsement to some other bank, possibly for more than the amount paid for it. In either case it would add to its gross income by this transaction. So far as the transfer of funds from one part of the country to another is concerned, the time draft has the same effect as the sight draft, except that the transfer may be delayed until the maturity of the draft.

It may be observed that the time draft discounted at the drawer's local bank accomplishes two distinct things at once. It gives the seller

Smith and his bank to use the bankers' acceptance rather than the promissory note. Smith, therefore, applies to his bank for a "letter of credit," which authorizes Brown to draw ninety-day drafts upon the bank up to the amount of \$5000, with the understanding that these drafts will be accepted by the bank upon presentation. The letter of credit is mailed to Brown. Brown thereupon ships the silver, draws his draft for \$5000 on the bank payable ninety days after date, and takes the draft, the bill of lading for the shipment of silver, and the letter of credit to his local bank. The Denver bank being assured by the letter of credit that the draft will be accepted by the reputable New York bank does not hesitate to buy it from Brown, discounted at the current rate of interest.

The Denver bank then mails the draft, with the bill of lading attached, to its correspondent bank in New York, which presents it to Smith's bank for acceptance. The bill of lading is then turned over to the accepting bank, which will give it to Smith so that he may get his silver from the railroad. The accepted draft, now a bankers' acceptance, may be held by the correspondent bank for the Denver bank until it matures, to be then collected, or it may be sold at once at the current rate of discount for bankers' acceptances, usually a rate lower than the rate for bank loans. If the Denver bank retains ownership of the draft to maturity, it earns the difference between the amount it paid to Brown for the draft and its face value. If it sells it upon acceptance, it earns the difference between the price it paid and the price received, and this must be enough to make the venture attractive, otherwise the bank would not undertake it. When the draft matures, the accepting bank must pay its face value to whatever person or bank then owning it.

It remains to point out how the accepting bank is reimbursed for the money paid out and how remunerated for its service. The understanding between Smith and the accepting bank when the letter of credit is issued is that Smith will deposit with the bank on or before the date of maturity the \$5000 required to pay it, the expectation being that Smith will be able to do this from money received for the products manufactured from the silver during the ninety days. The bank must, of course, be assured of Smith's financial integrity before entering into the agreement. It will be observed that the accepting bank in this case advances no funds of its own, but merely accepts the draft in Smith's place. The operation is quite analogous to endorsing Smith's promissory note. For this service the bank charges Smith a moderate commission. The question may be raised, Who actually bears the burden of the interest charge on the \$5000 for the ninety days? The answer appears

Concerning the trade and the bankers' acceptance, as well as concerning some other forms of exchange discussed in this chapter, more will be said in later chapters dealing with the development of the banking system of the United States. In this chapter the main concern has been to give the reader an understanding of the forms of domestic exchange, and the functions performed by each, and to lay the groundwork for the more complicated discussion of foreign exchange in the next chapter.

but in pounds sterling, and a bank draft drawn on a bank in Paris is payable in French francs. But the buyer of the draft from the New York bank pays in dollars, and so the question arises, How many dollars and cents must he pay per pound sterling or franc, or, in other words, what will be the rate of exchange?

When both countries are on the gold standard, the market rate of exchange for bank sight drafts will tend to be near the so-called mint rate, or par, of exchange. The mint rate, or par of exchange, between any two gold-standard countries represents the relative amounts of pure gold in their respective units of value. Thus, the par of exchange between the United States and England was formerly 4.8665, because the British pound sterling, under the mint laws in force, contained 4.8665 times as much pure gold as the United States gold dollar. The pound sterling contained 113.002 grains of pure gold and the United States dollar 23.22 grains of pure gold. It should, perhaps, be emphasized that it is the pure gold content of the two coins that is compared, not their respective weights, a fact worthy of note when the gold money of the two countries is not of the same degree of fineness. American gold coins, it will be recalled, are nine-tenths fine, but British coins are eleven-twelfths fine, so that British gold coins contain more pure gold per ounce than American gold coins.

Before the World War there was a confusing lack of system in expressing the mint par of exchange between the United States and other countries. Thus, while the mint par of exchange between the United States and England was stated as 4.8665, which represented the number of dollars to the pound sterling, the mint par between the United States and Switzerland was often stated as 5.18, which represented the number of Swiss francs to the dollar. To one unfamiliar with the facts it might have seemed that the Swiss franc was worth more in American money than the pound sterling. During and after the World War it became the practice to express both the mint rate and the market rate of foreign currencies uniformly in terms of the number of dollars or cents required to equal the respective foreign units of value. For example, the mint par of the pound sterling was stated as \$4.8665 and the mint par of the Swiss franc as 19.3 cents.

The mint rate of exchange remains comparatively fixed. It changes only when one of the two countries concerned changes the gold content of its unit of value. Such changes rarely occur during normal times.¹ One early example of such a change was when the United States reduced

¹ Under the plan of a "compensated" or "commodity" dollar, changes in the gold content of the dollar would be frequent. This subject will be considered in Chapter XXIX.

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the gold content of the dollar from 24.75 grains to 23.22 by the laws of 1834 and 1837. No further change was made in the gold content of our dollar until the currency legislation of 1933 and 1934, discussed in detail in Chapter XXIX. Since the World War there have been numerous such changes in European countries as a result of the process of devaluation of the currencies of the countries concerned. The French franc, for example, was reduced after the war from a value of \$0.193 in our money to \$0.0392. This reduction in the value of the legal unit of value was deliberately made for the purpose of reducing the burden of indebtedness resting upon the Government, business firms, and individuals created during the period of paper-money inflation. Similar reductions in the gold unit of value were made by Italy, Belgium, and other countries of Europe. The German mark, however, has remained unchanged at its pre-war value, but there the burden of indebtedness built up by the Government and others during the paper-money inflation period of the war and immediately after was wiped out by the convenient process — for the debtors — of virtual repudiation. When the gold standard was restored, after the paper-money debauch, old debts were scaled down by making one new gold mark equivalent to 1,000,000,000,000 paper marks.

Since foreign exchange transactions are concentrated largely in the great financial centers of various countries — which, incidentally, are in many cases also the political capitals, as in the case of London, Paris, and Berlin — it has become customary to speak of the rate of exchange on London, Paris, Berlin, etc., rather than of the rate on England, France, or Germany, and that practice will be followed in this chapter.

3. THE FOREIGN EXCHANGE MARKET IN THE UNITED STATES

Practically all the foreign exchange bought or sold in the United States passes through the hands of a comparatively small number of foreign exchange dealers located in New York City, including commercial banks, investment banking houses, acceptance houses, and the head office of the American Express Company. Persons or firms located in New York City may buy and sell directly from or to these large dealers, while others may buy and sell through agents of the large dealers who operate in practically every city in the United States. Some large banks in other financial centers, as Chicago, New Orleans, and San Francisco, buy and sell foreign exchange on their own account, but are not so well equipped as the New York dealers with foreign connections and agents which permit the latter to buy and sell exchange on all quarters of the globe.

The foreign exchange dealers maintain accounts or deposits with correspondent banks or branch banks in foreign countries, and can draw drafts against these accounts payable in the money of the foreign country just as an individual in the United States can draw checks in dollars against his personal checking account with his local bank. To establish the accounts in the first place and to maintain them at a satisfactory level while drawing drafts against them, the foreign exchange dealers might ship gold to their foreign correspondent banks or branches. But ordinarily they find it more convenient and economical to establish and maintain these accounts by purchasing drafts payable in those countries and sending the drafts by mail to their correspondents for collection. They are thus in the foreign exchange markets both as buyers and sellers of exchange. To the New York importer, for example, who has a payment due in London, the New York bank dealing in exchange can sell a draft drawn on its London correspondent, and from the exporter who has consigned a shipment of goods to an English buyer it can buy the draft drawn against that buyer and payable at some designated London bank. If the bank manages to buy regularly about the same amount of exchange that it sells, it can avoid the necessity of shipping gold either way, and its only expense in connection with these transactions will be the clerical labor involved — postage, stationery, and a fair share of its general overhead expenses. These expenses the bank can cover by charging a little higher price for the drafts which it sells than it pays for the drafts which it buys.

Foreign exchange bankers sell not only demand or sight drafts drawn on their foreign correspondents, which are called "bankers' demand" or "sight bills," but also time drafts, payable thirty, sixty, ninety, or more days after sight or after date, referred to in some cases as "bankers' long bills." And they buy not only commercial demand or sight bills, but also commercial time bills and trade acceptances. An important feature of the foreign exchange market is the bankers' acceptance, already described in connection with the domestic exchange market. The bankers' acceptance is relatively more important in foreign trade than in domestic trade because there are frequent occasions for its use when buyers and sellers are separated, not only by great distances, but also by differences in language, race, and other characteristics, which prevent that full confidence in foreign trade which is commonly found in domestic transactions. The wide use of the bankers' acceptance has led to the development, not only of acceptance houses which specialize in buying and selling acceptances, but also to the establishment in some financial centers, notably in London, of accepting houses, whose

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primary function is the accepting of drafts drawn against them. Where such houses have a long established reputation for financial integrity, business men are glad to pay them a moderate commission for their acceptance services, since a draft drawn on and accepted by such a concern can be sold more readily and at a lower discount than a draft drawn on and accepted by a less well-known importer.

In addition to the types of foreign exchange already mentioned, the dealers also sell cable transfers and travelers' checks. Cable transfers are similar to the telegraphic transfers discussed in the preceding chapter. If a New York man, for example, unexpectedly has occasion to make immediate payment of £1000 in London, he may buy a cable transfer for this amount from his foreign exchange banker at the market rate for such transfers. The banker then sends a cable to his correspondent in London ordering the latter to pay the designated payee the thousand pounds. As a result of this transaction the New York bank would have more dollars in New York than before, but a thousand pounds less on deposit with its correspondent in London. In addition to the regular rate of exchange, the buyer of the cable transfer would have to pay the cost of the cable.

The traveler's check is an order payable by the issuing bank directly or through its correspondents to the order of the holder. As issued by the Mellon National Bank, for instance, it is at one and the same time a piece of domestic exchange and a piece of foreign exchange. A \$20 traveler's check, for example, is payable in the United States in the designated number of dollars, but in foreign countries in foreign money at the bankers' buying rate of exchange. Such checks may be sold by American banks at their face value, or a small commission may be charged above their face value. Travelers' checks represent a safe and convenient form of currency. They cannot be cashed until countersigned by the owner, who places his signature on each check in the space provided at the time of purchase. His signature is all the identification required at the time the check is cashed. It may be cashed, not only at almost any bank, but at stores, filling stations, or other places of business. Should the checks be lost before being countersigned, the issuing bank or its correspondent can be notified and payment stopped. Since it is difficult for anyone to forge another man's signature under the eye of another person without making the process conspicuous, there is small chance that a lost traveler's check will be countersigned by another party and cashed. With a plentiful supply of travelers' checks issued by one of the great banks in the United States, one may travel in any country in the world with banking facilities and keep one's self supplied

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In this analysis we have three distinct problems to consider. First, what determines the basic rate — the rate on bankers' sight bills? Second, what determines the difference between the rate on bankers' sight bills and bankers' time or long bills? Third, what determines the difference between bankers' bills and commercial bills? Of these three problems the first is the most complicated and requires the most detailed consideration. The second and third can be disposed of with little difficulty.

To begin with, it should be observed that the primary purpose of using all forms of foreign exchange is ordinarily to avoid the trouble, expense, and danger involved in shipping money — which in international transactions means ordinarily gold. When time bills are used, the element of bank credit or commercial credit enters, and in some cases it may be that the main consideration is the extension of credit rather than the avoidance of gold shipments. But in the case of sight bills, the primary purpose in using them is to avoid the necessity of shipping money.

This being so, the rate on bankers' sight bills in any country drawn on banks in another country, when both countries are on the gold standard, will not ordinarily rise above the par of exchange plus the cost of shipping gold. Thus, before the World War, when both England and the United States were on the gold standard and the par of exchange in New York on London was 4.8665, and the cost of shipping gold was not in excess of two cents per pound sterling, the maximum rate that was likely to prevail for bankers' sight bills was 4.8865. This was not, as sometimes indicated, because, rather than pay more than par plus the cost of shipping gold for bankers' drafts, merchants who had payments due in London would ship gold. Few individuals or firms other than the great foreign exchange bankers have facilities for shipping gold, and business men might have paid a rate much higher than 4.8865 for bankers' sight bills rather than have shipped gold themselves. The true reason that the rate would not rise above 4.8865 was that at a higher rate bankers could make a profit in shipping gold to London and selling drafts against the deposits thus created in London. Such shipping of gold tended to check the rise in exchange rates for several reasons to be considered a little later.

Similarly, the rate on bankers' sight bills before the war was not likely to fall below the par of exchange less the cost to the bankers of importing gold from London. If the rate fell below 4.8465, assuming a cost of shipment of two cents per pound sterling, it paid bankers to buy bills rather than to sell them, and to import gold to build up their New

York balances. If one banker was willing to sell his drafts for less than 4.8465, it would pay some other banker to buy them, send them to his London correspondent for collection, and have the proceeds sent to New York in gold. The low rate would thus tend to dry up the supply of bills in New York, so that the rate would tend to rise to or above the gold import point.

The foregoing reasoning is based on the assumption that gold is freely available for export by bankers, and this assumption is retained throughout this chapter in the reasoning pertaining to rates of exchange between gold-standard countries. It would apply only with qualifications if governments in any way restricted import and exports of gold in settling international trade balances. It is not yet clear—in June, 1934—to what degree the seizure of the entire gold stocks of the United States by the Federal Government may restrict the gold exports and imports and affect the rate of exchange. With a huge "equalization" or exchange stabilization fund in the hands of the Treasury, the rates of exchange in the United States on foreign financial centers may be regulated by the Treasury rather than by the normal business activities of the foreign exchange dealers buying to sell at a profit. Concerning the regulation of foreign exchange rates by means of equalization funds something will be said in Chapter XXIX.

5. WHY COMMERCIAL BILLS RANGE LOWER THAN BANKERS' BILLS

Postponing temporarily the discussion of the causes of fluctuations in the basic rate on bankers' sight bills between the upper and lower limits, the gold export and gold import points, we may consider the relation between bankers' bills and commercial bills. It has already been pointed out that the payments due from Americans to foreigners constitute the demand for foreign exchange in the United States, while payments due from foreigners to Americans constitute the supply. The foreign exchange bankers themselves are not in a large way primary sources of either demand or supply of exchange. The primary sources of supply of foreign exchange in the United States are those individuals and firms that have sold goods or services to foreigners for which they are to be paid; and the primary sources of demand are those individuals and firms that have bought goods or services from foreigners for which they must pay. For effecting payments in both directions various forms of exchange are used, but before the World War upheaval the most common way for an American to make a payment in London was to buy from a banker a bankers' sight bill on London and to send it to the payee by mail. And the most common way for an American who had sold goods

to an Englishman to receive payment was to draw a draft against the Englishman, or his bank by previous arrangement, and to sell this draft to a foreign exchange banker directly or through an agent. Let it now be assumed, for the sake of lucidity in analysis of a complex problem, that these methods of payment, once used almost exclusively, are the only methods now used, and that the whole foreign exchange market is embraced in the market for drafts on London in New York. Let it be further assumed that all payments made to Englishmen by Americans are for goods imported, and all payments received by Americans from Englishmen are for goods exported to England.

If there were no foreign exchange dealers, the American exporters of merchandise might sell the drafts drawn against the English buyers to American importers, who might then use them in making payments to the English exporters from whom they had bought. It is, however, much more simple for an exporter who has a draft for sale to sell it to a regular dealer in exchange than it is for him to find an importer who wants a draft of the particular denomination he has for sale. And it is easier for an importer to buy a draft from a banker who has drafts for sale regularly in any denomination than it is to find an exporter who has a suitable draft for sale. This is the economic justification of the foreign exchange bankers — they are useful middlemen, just as are dealers in butter and eggs. The fact that the importer buys drafts from the bankers and that the exporters sell to the bankers does not materially change the total demand and supply. The primary result of the banker's intervention in these transactions is that the buyers of exchange obtain a bank draft exactly when they want it and for the amount they want instead of a commercial bill available perhaps at a time and in a denomination not quite satisfactory. The bank draft, too, will be considered better pay on the other side than the commercial bill and its use will tend to induce the foreign seller to give the importer better price terms than he otherwise might give.

The bankers' bills being, therefore, more desirable than commercial bills, buyers of bills are willing to pay a higher price for them, and they must pay a higher price as an inducement for the foreign exchange bankers to remain in the business. Business men might, in fact, be willing to pay considerably more for a banker's bill than for a commercial bill which was not just what they wanted, but the foreign exchange business is highly competitive in nature, and no great difference can long exist between the price of commercial sight drafts of good quality which bankers can buy without risk and the bankers' own bills. There is a natural margin between these two sets of prices just wide enough to

cover the cost of conducting the business, with perhaps a small profit for the more able and alert dealers and possibly a loss for others. As in all competitive enterprises, about all that is realized by all the competing firms in the aggregate in the long run is cost of production. How narrow the margin is between the two types of bills is fairly illustrated by the closing quotations on sterling bills in New York on August 30, 1930, when both England and the United States were on the gold standard. As of that date bankers' sight drafts were quoted in the *Commercial and Financial Chronicle* at $4.86\frac{1}{16}$ and commercial sight bills at $4.86\frac{5}{8}$, the difference being one sixteenth of a cent per pound.

Any appreciable widening of the margin would make possible such tempting profits that the bankers in competition with one another either would bid up the rate on commercial bills or lower the rate on bankers' bills. On the other hand, if the margin permanently disappeared, the bankers would not continue in the business.

Since commercial sight bills normally range just a shade — perhaps a sixteenth of a cent per pound — below bankers' sight bills, it follows that their maximum range between two gold-standard countries will be from just a little under the gold import point to just a shade under the gold export point.

6. FLUCTUATIONS OF THE RATE BETWEEN THE GOLD POINTS

It has been shown that the basic rate of exchange — the rate on bankers' sight bills — may fluctuate above par to the gold export point and below par to the gold import point, and that in these fluctuations it will be accompanied closely by the market rate of commercial sight bills. It remains to consider the causes of the fluctuations of these rates between the gold points. Why are the rates sometimes above and sometimes below par? What makes them rise and fall?

As a convenient point of departure in this difficult part of our analysis, let it be assumed that both England and the United States are on the gold standard with the former mint par of exchange of 4.8665, that the New York bankers have satisfactory balances of funds on deposit with their London correspondents, and that the rate of interest or discount on funds is the same in London as in New York, say 4 per cent. Let it be assumed further that aside from foreign exchange transactions they have no occasion to move funds either from New York to London nor from London to New York, but that their balances on each side are such that substantial transfers could be made either way without embarrassment. Finally, let it be assumed that the total demand for exchange in New York on London approximately equals the supply from day to day.

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of bankers' bills would suddenly be raised to the gold export point. The bankers would look ahead to this contingency, and would not continue selling freely at par sight bills which might soon command a price much higher. Likewise, they would become more eager to buy commercial bills to build up their London balances against the time when bills would be higher. This attitude of caution and foresight would cause the rate on both bankers' bills and commercial bills to rise gradually, the rise continuing until the gold export point were reached, provided the excess of payments to London continued.

Many bankers would have other reasons than the one just given for trying to prevent the exhaustion of their London balances, but these need not here be considered, since the one reason given is alone sufficient to explain why the rate on bankers' bills tends to rise gradually from par to the gold export point when a persistent excess of imports over exports develops.

Quite similar reasoning would apply to the opposite state of affairs in which the payments from London to New York persistently exceed payments in the other direction. New York exporters would offer more bills for sale than New York importers demanded from the bankers, and if the bankers sold all that were demanded and bought all that were offered, they would gradually exhaust their New York funds while building up unwieldy balances in London. Finally they would have no money available with which to buy drafts and would need to import, in the form of gold, part of the deposits built up with London correspondents. The rate of exchange on bankers' bills would drop to the gold import point, and the rate on commercial bills a little lower. But the decline would not be abrupt in this case any more than the rise would be abrupt in the other. The fall would be gradual as the bankers became more eager to sell bankers' bills and less eager to buy commercial bills in an endeavor to maintain their New York balances in a comfortable condition for purchases of bills when the gold import point would be reached. Obviously, if the New York bankers were engaged in a general commercial banking business, they would under no circumstances willingly permit their funds in New York to become completely exhausted, since they would need to maintain adequate cash reserves against deposits. Another point that should be made clear in this connection is that if all the banks in the United States were equally engaged in foreign exchange transactions, buying bills in excess of the amount sold would not necessarily exhaust their cash reserves. If they paid for the bills in cash, which is unlikely, the cash would be re-deposited in the banks. And if they paid for the bills in deposit credit

they would lose no cash. Under such conditions they would increase their deposit liabilities in New York, instead of depleting their reserves. But when only some banks are engaged in such transactions while most of the others are not, the banks buying excessive quantities of foreign exchange would find their cash reserves depleted as a result of persistent unfavorable balances at the clearing-house or with the federal reserve banks, just as they would when making an excessive amount of loans in the form of deposits subject to check, or excessive investments in securities.

7. THE CORRECTIVES OF EXCHANGE

Pausing now only long enough to remind the reader of the assumptions being made — namely, that no forms of exchange are used except bankers' and commercial sight drafts, that no payments are made except for imports and exports of goods, that the whole foreign exchange market is embraced in the market for drafts on London in New York and that the mint par of exchange is the pre-war par of \$4.8665 — we will proceed at once to consider the so-called correctives of exchange. These are forces set in motion by the departure of the rate of exchange from par upward toward the gold export point and downward toward the gold import point, which tend to retard the rise or the fall, and to reverse the direction of the movement.

Consider first an upward movement toward the gold export point. When the rate on bankers' bills rises because of the reluctance of the bankers to sell all that are being demanded at the existing rate, the cost of British goods to the importers in terms of American money will be increased, even though British prices remain unchanged. For example, £100,000 worth of English woollens would cost the importer when exchange is at par \$486,650; but with bankers' bills at 4.875 the cost of the same quantities of goods at the same price in London would be \$487,500, a difference of \$850. While this represents only a very small percentage of the gross cost of the goods, it may represent a very substantial percentage of the importer's net profit, enough to cause him to delay, reduce, or give up his purchase of the goods. The demand for bankers' bills would thus be somewhat diminished. At the same time the high price of commercial bills would permit the exporters to realize a higher price in dollars for their goods even though they had not raised the price to the British buyers in terms of pounds sterling. Since commercial drafts would rise by almost exactly the same amount as bankers' drafts, for £100,000 worth of exports the exporters would realize about \$850 more when bankers' bills were at 4.875 than when

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they were at par. Since this would add substantially to their net profits, it would tend to stimulate exports. The exporters, if necessary, would make some concession in terms to the British importers to induce them to buy sooner than they otherwise would, or in larger quantities. More goods being exported, the supply of commercial bills offered for sale would increase and the rate would tend to drop.

While there are presumably always in every line of business some buyers and sellers in doubt whether or not to buy or sell, and some who would be induced to buy or sell in larger quantities with a comparatively small change in price, it would probably be a mistake to lay undue emphasis upon this corrective of foreign exchange. Its force would not be great enough to overcome a strong tendency for exchange to rise or fall because of a persistent excess of imports or exports, arising from some deep-seated economic cause.

If an upward move in the rate continued until the gold export point were reached, it would then be checked by a much stronger corrective — the export of gold. Above this rate it could not go materially if there were no restrictions on the export of gold. If the rate on bankers' bills rose above the gold export substantially, bankers could make large profits by exporting gold and selling drafts against the foreign deposits thus created. This would increase the supply of bankers' bills. At the same time they would not buy commercial bills for more than it cost to export gold, and this would reduce the bankers' demand for commercial bills. The rise in the rate on both classes of bills would therefore be checked at the gold export point.

But this is not all. If the rate remained persistently at the gold export point, so much gold would be exported that the banks in New York and in the country as a whole would find their reserves endangered, and this would tend to cause many banks to pursue a more cautious credit policy — refusing more new loans than before and calling more old ones at maturity — and might also cause a rise in the discount rate. Business men, thus finding credit harder to get and interest rates higher, would be more eager to sell goods and less eager to buy, and if the credit stringency continued, a fall in prices would ensue. At the same time the excessive quantity of gold accumulating in the London banks would increase the reserve ratio of the banks there, increase their supply of idle cash, and make them more eager to lend. They would grant credit more freely and at lower rates. Consequently, business men would tend to buy more freely and to hold their own wares more firmly for higher prices. The result would tend to be a rising level of prices. With prices lower than before in New York and higher than before

in London, New York would be a relatively better market in which to buy than before; London a relatively better market in which to sell. Exports from New York to London would increase; imports from London to New York would decline. The demand for sterling exchange in New York would decline and the supply would increase, and the rate under this double pressure would naturally fall.

If all this reasoning seems too abstract and the chain of events somewhat improbable, the reader is invited to consider what would be the results if these correctives of exchange did not operate. If the excess imports continued into New York, gold exports would also continue until the banks had lost so much gold that they — and presumably the Government also — would be compelled to suspend specie payment. Should the Government prohibit the continued exportation of gold, hoping thus artificially to conserve the gold reserves of the banks and its own, this action would itself be tantamount to official suspension of the gold standard, since it would destroy that ready convertibility of other kinds of money into gold which is the essential characteristic of the gold standard.

Having now shown how the correctives of exchange would operate in New York with a persistent excess of payments due to London resulting in an exportation of gold, it is hardly necessary to give the reasoning in detail to show the results which would follow from a reverse movement — persistent exports of gold from London to New York. In that case the easy credit conditions and the rising prices would appear in New York, and the stringent credit conditions and the falling prices would appear in London.

An important qualification of the conclusions just reached must now be made. It is not necessary that there be a rise in prices in London and a fall in New York, or *vice versa*, to reverse the direction of the rate movement in exchange or the flow of gold. It is merely necessary that the prices in London become relatively higher than they were before compared with prices in New York. Such a relative change in the two sets of prices could be brought about not only by a rise in London and a fall in New York, but by a rise in London with a lesser rise in New York, or by a fall in New York with a lesser fall in London, or by stationary prices in London with a fall in New York, or by stationary prices in New York accompanied by rising prices in London; and it is probable that the required relative change in prices in the two countries concerned is brought about at various times in all of these various ways.

There are times when there is a persistent and world-wide rise in prices. Under such conditions gold exports from one country to another

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tend merely to check the rise in prices in the one and to hasten it in the other. And when, on the contrary, there is a persistent and world-wide fall in prices, gold exports from one country to another tend merely to hasten the decline of prices in the first and to retard the decline in the second. No actual price reversal need take place in either to bring an end to the gold movements.

8. SOME COMPLICATING FACTORS

Up to this point in our analysis of the causes of fluctuations in the rate of exchange, artificial conditions have been assumed. It has been assumed that the field of international trade covered only the trade between the United States and England; that payments made covered only imports and exports of merchandise; that our importers made all payments by purchasing bankers' sight drafts and our exporters received all payments by drawing sight drafts on English buyers and selling them to New York bankers; that the foreign exchange bankers had comfortable balances to begin with in both countries, and were not particularly concerned about what proportion of their funds was in New York and what proportion in London, so long as they retained a working balance on each side. Our next task will be to show that the conclusions reached with the aid of this simplification of the problem will not be invalidated by permitting the complicating factors to enter the problem.

Consider these complicating factors one by one. As already stated, most of the foreign exchange used in the United States is bought from or sold to the great New York foreign exchange bankers, either directly or through agents. But there are some independent dealers who have their own foreign correspondents and deal directly with merchants and others. But the rates charged by such dealers for bankers' bills and the rates paid for commercial bills, whether in New Orleans, San Francisco, or some other financial center, cannot vary materially from the rates in New York, because, as previously explained, under our present banking system funds may be transferred in large amounts from any part of the United States to any other part practically free of charge. Hence any difference in the rate on bankers' bills between New York and some other financial centers would open up an easy way of making profits, and competition among dealers would tend quickly to erase this difference. The rate of exchange in New York on any country in the world tends to become the rate for all the financial centers in the United States. So much for the first complication.

Consider now a second complication. Suppose that, instead of the American exporter always taking the initiative in collecting payment by drawing commercial drafts against the English importer, the English importer should at times assume the initiative by purchasing a banker's draft from his London banker and sending it to the American exporter. And suppose, too, that, instead of the American importer always assuming the duty of buying a banker's bill in New York and sending this to the English exporter, he should sometimes let the English exporter draw a commercial bill against him, to be sold to the London banker and sent to New York for collection. Would a mixture of these two methods of making and receiving payment affect the conclusions we have drawn concerning the relation between the demand and supply of bills and the market price? Would equal payments to be made both ways now result in the demand and supply of bills being equal both in New York and in London? It is not difficult to show that a mixture of the two methods would not change the total demand and supply of bills either in New York or in London.

Suppose, for example, that Smith in New York buys from Brown in London £1000 worth of goods. If he pays for the goods by purchasing a draft from his New York banker and sends the draft to Brown, the following transactions will occur in the two financial centers: Assuming exchange to be at par, Smith will pay his banker \$4866.50 for the draft and send it to Brown. Brown will present it for payment and receive from the London correspondent bank £1000 in British money, or credit. Now, this is precisely what would happen if Brown took the initiative in drawing a commercial draft on Smith, except that perhaps a different bank would have been concerned both in London and New York. The main point is, though, that Brown, having drawn his draft on Smith, would sell it to his bank and obtain £1000 in British money, and his bank would send it to its New York correspondent to be collected. When it was collected, Smith would pay the New York bank \$4866.50. In either case a New York bank would receive payment for a draft, and a London bank would make payment on a draft. The total demand and supply of drafts and the amount of money paid out or taken in by the banks concerned would not be affected.

Neither is the total quantity of exchange demanded or supplied affected by the fact that other forms of exchange than bankers' sight bills and commercial sight bills are employed. If the total payments to be made amount, let us say, during a given period to £10,000,000 sterling, that much sterling exchange will be demanded — the more exchange there is used in other forms, the less will be used in sight bills, but the

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total will remain substantially unchanged. When time or long bills are used, the date when the payment is actually made and the date of purchase or sale of the bills may differ considerably, and this may cause the total quantity of bills demanded or supplied to vary somewhat from the total payments made or received within a given period of a few months. Likewise, the lower rates paid for time bills might affect the total value of the bills relative to the nominal value of the payments made or received. But these are minor qualifications and do not substantially affect the general conclusion reached that a persistent excess of payments due from one country to the second will tend to cause a rise in the rate of exchange of the first on the second. Regardless of who buys or sells the exchange and regardless of the forms of exchange used, when the total demand exceeds the supply the rates will rise, and if the excess demand continues and is satisfied gold exports must follow.

9. ARBITRAGE

We come now to a more important complication, and one requiring somewhat more extended discussion. The United States and England trade, not only with one another, but with many other countries. Importers in New York buy bankers' bills, not only to pay for English goods, but for goods imported from many other countries. Exporters in New York have drafts to sell to the exchange dealers in New York, not only as a result of having sold goods to England, but as a result of exports to many other countries. The total demand and supply of bills in New York is then not represented by the total quantity arising from our trade with England, but the total quantity arising from our trade with all countries. Still assuming that no payments are made or received except for goods imported or exported, the total demand for exchange in New York will not exceed the total supply unless the aggregate value of goods imported from all countries exceeds the aggregate value of all exports. It follows from this that the rate of exchange on London need not rise, and would not rise substantially, if we should buy more goods from the English than we sold to them, provided only that the excess of imports from the English were offset by an excess of exports to other countries. This is true because drafts drawn on one country may be used to pay bills in another country, and drafts need not always be drawn on the country to which the goods or services have been sold.

To enter fully into details of the various relations existing between the foreign exchange operations of the foreign exchange dealers in the important financial centers of the world would require more space than

is available in this chapter, and for such an extended discussion the reader must be referred to the various standard works on foreign exchange. Here it will be emphasized only that the rate of exchange in New York on London or Paris or Berlin is not the result merely of excess payments due to or from each of these centers individually which would permit, let us say, the rate on London to be above par while the rate on Berlin was below par, and the rate on Paris exactly at par, but rather that the rate in New York on all other financial centers operating on the gold standard is determined by the total balance of trade with all other countries combined. If we have a heavy excess of payments to be made in the aggregate, the rate on all these centers will tend to rise above par; if we have a heavy excess of payments to be received, the rates will tend to decline together below par.

Any considerable variation in the rate in New York on London, Berlin, and Paris, for example, would permit bankers to make handsome profits by the process of arbitrage. To take a very simple illustration, not requiring tiresome calculations, let it be assumed that the New York rate on London is one fourth per cent above par, the rate on Paris is one fourth per cent below par, and the rate in Paris on London at par. Then a New York banker could sell a draft for £100,000 payable in London for one fourth per cent more than $100,000 \times \$4.8665$. His payment in dollars would be \$1216.625 more than the cost of the bill would be at par, which would be \$486,650. At the same time he could buy in Paris, at par, a £100,000 draft on London, which would cost him the gold equivalent in francs of \$486,650, and pay for it with a Paris draft bought in New York at one fourth per cent less than par, or \$1216.625 less than \$486,650. The Paris draft on London would cover, or offset, the draft sold on London. He would thus net a profit of twice \$1216.625 or \$2433.25. Since the actual cost of making these deals would be small, most of the gross profit would be also net profit. By these various transactions, it will be observed, the banker would not really have transferred any of his own funds from New York.

Naturally, any attempt of bankers to realize easy profits from such divergences in the rates of exchange in New York on other centers would tend quickly to bring the rates more in harmony with one another. As a rule, no gold-standard country is likely to find its rate of exchange on other gold-standard countries varying widely — some being below par while others are above par. If any are much below par, all will be below; if any are much above par, all will be above. In the example given of a high rate on London and a low rate on Paris, the facts that the New York banker could make a profit by purchasing bills on Paris

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and at the same time selling bills on London would tend to cause the Paris rate to rise and the London rate to fall, since the banker's purchases increased the demand for the one and his sales increased the supply of the other. Moreover, the banker's purchases of drafts on London in Paris would tend to force the Paris rate on London above par in harmony with the New York rate on London, so that London exchange would be at a premium both in Paris and New York, and Paris exchange at a discount both in New York and London.

10. DIFFERENCES IN THE DISCOUNT RATE AND TRANSFER OF FUNDS

One of the assumptions made was that the bankers could use their funds with equal advantage in both financial centers concerned, as New York and London, the rate of interest on loans being the same in both places. No transfers of funds were made, then, except as a by-product of dealings in exchange. Often, however, there is a distinct difference in the rate of interest in the two centers — funds invested in short-term loans, trade acceptances, bank acceptances, and commercial paper of other kinds, earn more, perhaps, in New York than in London. If the difference becomes appreciable, New York bankers as well as London bankers will want to transfer some of their funds from London to New York. The bankers in New York will, therefore, want to sell more bills than they buy, causing the supply of bills to be increased relative to the demand, and tending to cause a fall in the rate of exchange in New York on London, which means, of course, a rise in the rate of exchange in London on New York. Such transfers of funds by the bankers act as one of the correctives of a high rate of exchange accompanied by an outflow of gold, which, it will be recalled, tends to cause a rise in the rate of interest in the country exporting the gold. Since, however, when the gold export point is reached in New York, the New York bankers will be likely to have reduced their funds in London to a minimum, they will have few left to transfer to New York. But in such cases they can arrange for loans from their London correspondents, draw drafts against these loans, sell these in New York, and thus increase the supply of exchange on London at the same time that they increase the amount of funds which they have available for loans and investments in New York. Instead of a direct loan from a London bank, the New York bank may obtain an acceptance credit. That is, it may draw long bills, called "finance bills," against the London bank to be accepted by the latter, and sell these bank acceptances to obtain funds in the New York market. On occasion it may draw such bills and sell them in the New York market for the account of the accepting

bank. By means of such operations a large supply of exchange may be created. This comment brings us naturally to the discussion of our next complication, previously eliminated by assumption.

Payments are made and received in New York and other exchange centers, not merely for imports and exports of merchandise, but for many other things — stocks and bonds, shipping services, loans, traveling expenses, and the like. When the New York banker obtains a loan from his London correspondent against which he may draw drafts for sale in New York, he has in effect sold to the London bank his promise to pay in the future, and he is paid in terms of a deposit credit today against which he may draw. This has increased the supply of exchange in New York as truly as if the banker had sold cotton or wheat to Englishmen, but there is this important difference: in a short time the loan must be repaid, perhaps, and when loans are repaid, exchange is required just as truly as when goods are purchased. In normal times the demand and supply of exchange may not be much affected by operations involving the making and repaying of loans and the sales and purchases of stocks and bonds and various classes of short-term commercial paper. But in times of crisis these operations may breed panicky conditions and cause such a drain of gold from countries unfortunately situated financially as to involve serious danger of suspension or actual suspension of specie payment, as in the case of England in September, 1931.

11. INTERNATIONAL CREDITS AND DEBTS

Ordinarily the sum total of payments due from any one country to all the rest preserves some sort of balance with the sum total due to that country from all the rest, so that exchange, while it may fluctuate frequently between the gold points, will neither rise persistently above the gold export point nor fall persistently below the gold import point. If, however, a country fails to sell goods and services to others to an amount equaling in value the goods and services bought from others, it may begin to pay the balance by the sale in other countries of its corporation bonds, short-term commercial paper, and government bonds. It accumulates, in short, an international debt on which interest must be paid, and the principal of which it must stand ready to pay when the various classes of debts mature. If under such circumstances foreign creditors begin to fear for the safety of their investments in the country in question, they will demand payment of their short-term credits as these currently mature, and will begin to unload in the markets of the country their long-term securities — stocks and bonds. Con-

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ceivably the latter could be sold in the markets of still other countries, but from these in turn they might be diverted to the country of issue. Every foreigner would want to rid himself of risky holdings. But it would be the short-term credits currently maturing that would cause the most trouble. These would have to be paid directly by the country to which they had been granted and could not in time of crisis readily be transferred to some other country. All payments of short-term loans and for long-term securities necessitated by such a crisis would represent a demand for exchange in the debtor country on the countries to whom the payments were due. The total demand might be so tremendous that it would quickly force the rate of exchange on all other gold-standard countries to the gold export point, and gold would begin to flow out in enormous quantities. If the panic were severe, the ordinary correctives of exchange would be powerless to reverse the movement, and the export of gold would continue until the country's supply had been exhausted, or until the Government and the banks suspended specie payment.

It should be remembered that any country can easily become involved in foreign indebtedness to an amount exceeding its total gold supply several times over. During the German financial crisis of 1931, the German short-term indebtedness, on a large part of which foreign creditors demanded immediate payment, was several times the total gold supply in the country, leaving entirely out of consideration the reparations payments due, the interest on German bonds owned by foreigners to the amount of billions of marks, and the bonds themselves which might be dumped on the German markets. Such crises in exchange tend to spread from country to country. When England, in an attempt to prevent the financial collapse of Germany in the summer of 1931, had extended enormous short-term credits to that country which it did not or could not collect, and had itself obtained short-term credits from other countries, it naturally fell a victim to the general international panic — being unable to match the demand for exchange with an adequate supply. Suspension of specie payment was finally, after a hopeless struggle, accepted as the only feasible solution.

Such crises are sometimes explained as resulting from the transfer of short-term capital, or liquid capital. This appears to be a trifle misleading. It is short-term credit rather than short-term capital that does the mischief. If foreign bankers lend Germany millions of dollars, on short-term paper, and Germany invests the money proceeds of such loans in fixed capital and equipment, or even in raw materials or pay-rolls, it is the credit that is short-term rather than the capital. The

capital may be only too long in term — it may be sunk eternally, in fact. When the loans are called, they cannot be repaid with the "short-term capital" because there is no short-term capital available. There may be nothing which can be sold to foreigners to provide the requisite exchange, and the gold outflow results as a consequence. Because Johann Schmidt *et al.* obtained short-term loans in too great profusion and were unable to offer in the foreign exchange markets bills in sufficient quantity to offset the current demand plus this extra demand when the loans fell due, Germany was in danger of insolvency, and was saved from collapse only by the intervention of foreign bankers and governments, with, as already stated, consequences almost as disastrous to England as those which were staved off in Germany.

In the terminology of business finance, Germany and other countries which suffered financial collapse in the crisis of 1931 had exhausted their working capital by permitting their current liabilities to exceed their current assets, in so far as their international relations were concerned. The governmental and financial leaders of any country would do well to prevent such a condition from arising within their country if they desire to be assured of future financial stability.

12. CAUSES AND RESULTS OF SUSPENSION OF GOLD PAYMENT

How excessive short-term debts to foreigners may cause a country to be forced off the gold standard by persistent and heavy exports of its gold has just been explained. But other causes, separately or in combination with such international debts, may bring about the suspension of gold payments. The Government, for example, might issue such excessive quantities of paper money that prices would rise above the world level in the country in question. This would so stimulate imports and discourage exports from that country as to lead to a rise in exchange above the gold export point and to the export of gold. If the expansion in paper money continued, and if the government paper money were made legal tender and eligible for bank reserves, the export of gold would not force credit contraction or a fall in prices, and, with this corrective of exchange thus made powerless, the export of gold would continue until the gold reserves of the banks as well as of the Government were exhausted. The gold would tend, in the first instance, to be drawn out of circulation and out of bank reserves, but as a consequence the Government's receipt of revenue in gold would diminish, and if it had certain obligations to pay in gold, as in the redemption of its credit money, its gold reserves would also quickly be exhausted.

Again, the excessive issue of bank notes might bring about a similar

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result, particularly if the notes issued by some banks were made eligible as cash reserves of other banks, as has been in some measure the case in the United States. Finally, excessive expansion of bank credit in general, whether by the avenue of note issue or loans in the form of deposits subject to check, may permit such a great commodity price inflation and cause such large exports of gold that the supply of gold may be reduced to such low limits before the crash in prices ensues that the banks will be unable to maintain cash payment, particularly if the general fall in prices causes many banks to fail, impairs confidence in banks in general, and results in a withdrawal of bank deposits in cash and the hoarding of specie. Such a suspension, resulting from a bank panic, and not from the issue of government paper money in the form of legal tender in excessive quantities, is likely to be only temporary, and followed after the deflation of bank credit by resumption of specie payment, as happened in the United States in 1893 and 1907.

When a country which has been on the gold standard suspends gold payment and remains on a paper money basis for some time, the rate of exchange on other countries no longer fluctuates within the limits of the gold points, but rises definitely above the gold export point. How far above the par of exchange it rises depends primarily upon the rate of depreciation of its paper money in terms of gold within the country, and upon the relation between prices within the country and in other countries still on the gold standard. If gold is still in use in the country, and there is a market for gold in terms of the legal-tender government paper money or bank notes, in which gold is bought and sold at a premium in the current money in use, then the rate of bankers' sight bills will tend to be the mint par of exchange multiplied by the premium on gold. Thus, when during the Civil War our greenbacks were quoted at \$2 in greenbacks for \$1 in gold, the rate of sterling exchange tended to be approximately 2×4.8665 , or \$9.733 for one pound sterling.

Around the par of exchange multiplied just as they do between two rates on sight bills would tend to fluctuate just as they do between two gold-standard countries around the par of exchange. In other words, they would still fluctuate in terms of gold within the same limits as before the departure from the gold standard, but this degree of fluctuation would be magnified in proportion to the number of legal-tender paper dollars that were required to buy one gold dollar. Assuming some measure of stabilization of the degree of depreciation of the paper money, and some gold still available in the market for exportation and importation, the width of fluctuation in the exchange rates would vary in proportion to the degree of paper-money depreciation. But the degree of de-

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ket rate depends upon and fluctuates closely around the mint rate or mint parity.

By this is not implied, of course, that when the exchange value of the mark is, say, five marks for one dollar, that prices of all commodities in Germany are five times as high in terms of marks as prices in the United States in terms of dollars, any more than that when both countries were on the gold standard, with a mint rate of 4.2 marks to the dollar, all prices in Germany were just 4.2 times as high as in the United States. As between two gold-standard countries, prices of particular commodities tend to become adjusted to relative conditions of cost of production within those countries and conditions of international trade. If Germany, for example, produced not enough wheat to supply domestic consumption and imported wheat from the United States when the price of wheat in Chicago was one dollar a bushel, the price of wheat in Berlin was not 4.2 marks, the equivalent in gold of one dollar, but at least 4.2 marks plus the cost of transportation and import duties if any were imposed. Similarly, the price of pocket knives selling for 4.2 marks in Berlin was not one dollar in New York, but at least one dollar plus the cost of transportation and import duties.

Before the war, when practically all important commercial countries were on the gold standard, prices in terms of their gold currencies tended to adjust themselves so that the relative prices in the various countries tended to bear a close relation to the mint par of exchange, subject to the considerations just noted. Prices in Germany tended to be approximately 4.2 times as high as in the United States because the rate of exchange was 4.2 marks for one dollar, and prices in England tended to be less than a fourth as high as in the United States because one pound sterling equaled \$4.8665. Prices tended to be higher or lower relative to the mint rate of exchange, and consequently also relative to the market rate of exchange, since, under the gold standard, the mint rate and the market rate are approximately the same. It represented no violent wrench of the reasoning process, then, when the various European countries departed from the gold standard and their unit of value became the paper mark, paper franc, paper pound, etc., to draw the conclusion that the rise of prices of goods imported into these paper-standard countries was the result of the depreciation of their currencies in terms of the gold dollar and other gold currencies. Naturally, if the exchange value of the mark fell to twenty marks for one dollar, prices in Germany would be higher than when 4.2 marks were worth one dollar. The purchasing-power parity theory of exchange rates holds, however, that the rise of prices in the paper-standard countries was the cause and

not the result of the depreciation of the foreign exchange value of their currencies, and that the natural or normal exchange value of the currency was the purchasing-power parity rate, which might be calculated by comparing the relative rise of prices in the paper-money countries and the gold-standard countries, notably the United States from 1914 to 1933. The rise of prices in the paper-money countries was held to be due to the increase in the quantity of money issued, and according to the quantity theory of money, this rise tended to be in proportion to the increase in the total amount of money in circulation.

If, then, Germany, for example, doubled the amount of money issued, one might naturally expect, with certain qualifications noted in our discussion of the quantity theory of money, that prices in Germany would double, and that, in the absence of a rise of prices in gold-standard countries, the value of the mark in gold currencies would decline to half the former rate, and, if the amount of money were increased a hundred fold, the foreign exchange value of the mark would decline to one per cent of its former level. If prices in gold-standard countries also had risen, the decline in the exchange value of the mark would be less.

14. CALCULATING THE PURCHASING-POWER PARITY RATE

The purchasing-power parity theorists devised a formula for calculating the purchasing-power parity rate of exchange as follows:

$$\frac{\text{Index number of prices in gold-standard country} \times \text{mint par}}{\text{Index number of prices of paper-standard country}}$$

The application of this formula may be made clear by an example. It may be assumed that the relative prices in the United States and England in 1913, when both were on the gold standard, had become adjusted to the mint par of exchange of \$4.8665 to the pound, and to the existing custom duties and transportation charges. In January, 1921, the index number of the United States Bureau of Labor Statistics stood at 170, indicating a rise in prices of 70 per cent since 1913, and the British index number of the *Statist* stood at 232, indicating a rise in prices in England of 132 per cent since 1913. Applying the formula, we get:

$$\frac{170 \times \$4.8665}{232} = \$3.566$$

The purchasing-power parity of the pound was, therefore, at this time \$3.566. The actual average market rate of cables in New York in January, 1921, was \$3.742; the purchasing-power parity rate was

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then 95.30 per cent of the market rate on cables. Sometimes the deviation of the market rate on sterling from the purchasing-power parity rate thus calculated was greater and sometimes less than the 4.7 per cent here shown. Not only in the case of England, but in the case of France, Germany, and Italy, purchasing-power parities calculated in a similar way deviated, and sometimes greatly, from the actual market rate of exchange. Nevertheless, the correspondence between the market rate and the purchasing-power parity rate in the case of these various countries and over a long period of years has been striking, and the deviations can in large measure be accounted for in various ways so that they do not invalidate the theory.

In the example just given, it appears that the pound was overvalued in the exchange market relative to its purchasing-power parity. In January, 1921, it seems that a pound sterling in England would buy only as much as \$3.56 would buy in New York, but the cost of the draft to pay for goods bought was at the rate of \$3.74. Considering the rate of exchange and the relative prices in the two countries, it was better to buy goods in New York and sell them in London than to buy goods in London and sell them in New York; the high rate of exchange, it seems, would have so encouraged exports from the United States to England and so discouraged imports from England to the United States, and would thus have so increased the supply of sterling exchange and decreased the demand for it, as to cause the rate to decline closer to the purchasing-power rate. Consider, now, why the market rate might deviate widely from the purchasing-power parity rate, and might not be promptly restored to this rate by the effect of the deviation on the demand and supply of exchange.

15. VALUE AND LIMITATIONS OF THE PURCHASING-POWER PARITY CONCEPT

First of all, the purchasing-power rate is calculated by index numbers of prices which might not reflect exactly the average relative prices in the two countries — the perfect index number has not yet been invented. Second, the index numbers represent average prices in the two countries, not merely prices of those commodities entering most largely into international trade, and it is the relation of these prices in the two countries that determines the demand and supply of foreign exchange. Purchasing-power parity, calculated on the basis of index numbers of freely exportable commodities, would differ from the parity calculated by a more general index number of prices. Third, varying transportation costs and import duties and other restrictions on trade might prevent

the movement of goods from one country to the other which would naturally take place if the only consideration were the relative prices in the two countries. Finally, in this connection, it would take a very considerable change in relative prices to reverse the flow of scrap iron, let us say, from New York to London, to a flow from London to New York — the change would have to be at least equal to the cost of transportation from New York to London plus the cost of transportation from London to New York, a cost greater than, but comparable to, the cost of exporting or importing gold which determines the width of fluctuations in exchange between two gold-standard countries. It is only natural that the market rate of exchange determined by purchasing-power parity should fluctuate more widely about the purchasing-power parity rate than the market rate between two gold-standard countries fluctuates around the mint parity. In the one case deviation from parity can be corrected only by the flow of more or less bulky commodities subject to high transportation charges and import restrictions; in the other case the deviation from parity, if it proceeds beyond the gold points, is corrected by the flow of gold subject to small transportation charges and normally subject to no import or export restrictions.

The value of the purchasing-power parity concept depends upon the use to which it is put. It would not be particularly useful to a speculator in exchange if he undertook to forecast changes in the market rate by comparing the current market rate with the purchasing-power parity rate. If, for example, the speculator observed that the market rate was below the purchasing-power parity rate, and for that reason expected it to rise and bought exchange on this basis, he might suffer a loss instead of making a profit. Instead of the market rate rising, the purchasing-power parity rate might fall as a result of additional issues of paper money and a rise in prices in the country of issue. On the other hand, the purchasing-power parity theory represents a basis of argument to refute certain fallacious arguments in respect to the relation between rates of exchange and prices.

16. RELATION BETWEEN DOMESTIC PRICES AND FOREIGN EXCHANGE RATES

During and after the World War the public officials responsible for the inflation of the currency through the issue of government paper money and bank notes of the central banks were loath to admit that they could be blamed for the rise in prices and the depreciation of their currencies in the foreign exchange markets. Therefore, they developed the following cause-and-effect argument:

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France, let us say, through the exigencies of war was compelled to buy more in foreign markets than she sold. Consequently, the rate of exchange in France on foreign countries rose above par and the franc fell below par. The franc having fallen in value, goods imported into France from gold-standard countries cost more in francs and had to be sold for higher prices in France than before. In so far as these imported goods entered into the costs of production and the cost of living, they tended to cause a general rise in prices. A higher general level of prices required that more money and bank credit be provided to carry on the existing physical volume of production and trade. Hence the currency had to be expanded by the issue of paper money — the only kind of money that could be expanded to meet the condition. Once the value of the franc, the pound, or the mark began to fall, speculators made the trouble worse by selling the declining currency short, thus accentuating the fall and increasing the cost of foreign goods and the domestic price-level, and making additional expansion of the currency necessary. This argument weakens under close inspection.

If France or any other country buys more than it sells and the demand for exchange consequently exceeds the supply and the rate on other countries rises, the rise will be definitely checked at the gold export point, if not before, by the export of gold and the other correctives of exchange. Only if the country lays an embargo on the export of gold, or exports all the gold available, can the rate of exchange rise above the gold export point. Assuming that it places an embargo on gold, it has then definitely by its own act departed from the gold standard, and chosen to use a paper standard and price its goods and services in terms of a paper standard. If the imports continue to exceed exports and the demand for exchange exceeds the supply, the rate will now rise definitely above the gold export point, but will the demand and supply remain independent of the relative price-levels in the two countries? Suppose the demand exceeds the supply at the rate, let us say, of six francs for one dollar, is there no limit to the rise of the dollar in terms of francs, and is there no relation between this rise and the price-level in France, except that the price-level in France will rise after the rise in the price of the dollar?

It should not be forgotten that when the exchange value of the franc drops, with prices in France remaining the same, an additional demand for francs would develop in New York because the export of goods from France to New York would grow, and at the same time the supply of francs in New York would tend to decline because, at the existing price-level in France and the decline in the value of the franc, exporters would

get less in terms of American money for their goods and would therefore export less. Here are two correctives of the rise in dollars in terms of francs which would tend strongly to put an end to the rise, provided no more money had been placed in circulation in France, thus causing or permitting a rise in French prices.

Everything considered, the idea that the rise in prices in the European countries during the paper-money episode of the World War and after was the result of a decline in the foreign exchange value of their currencies, and the inflation of the currency was the result and not the cause of the rise in prices, seems far-fetched. Doubtless in particular cases prices rose as a result of the decline in the rate of exchange, but in the main the line of causation was the reverse. First the countries inflated the currency and abandoned the gold standard. Prices rose in terms of the inflated paper currency, and the foreign exchange value of their currencies fell roughly in proportion to its purchasing power in the domestic markets, which was, as is attested by statistics roughly, in proportion to its increase in quantity. More precisely, in the early stages of inflation the paper money depreciated less rapidly and in the later stages more rapidly than it increased in quantity. This increasing rate of depreciation resulted from increasing distrust of the currency and consequent increasing velocity of circulation, as everyone passed it on as quickly as possible. It was not dependent upon international exchange rates. The rate of depreciation would have been similar in an economically isolated country as in one with international trade. The actual process of inflation in England, France, and Germany and its relation to unbalanced budgets will be described in Chapter XXVI.

17. DEPRECIATED CURRENCY AND FOREIGN TRADE

Another important question needs to be considered here: Does the depreciation of a country's currency in terms of gold or of the currencies of other countries give it an advantage in international trade competition, so that it may undersell its competitors and enlarge its sales in foreign markets? Many contend that it does, and at times it seems that they are correct. If a country can gain such advantages by the depreciation of its currency, then, strange as it may seem to one accustomed to believe in the virtues of good money, bad money may serve better than good, and a currency may be debased to the advantage of the national welfare. A careful consideration, however, of all the factors concerned leads to the conclusion that whatever advantages seem to be gained in foreign trade by means of a depreciated currency either are unreal or merely temporary.

If the depreciation of the currency in foreign exchange is just offset by the rise in domestic prices, then it can have no important effect on either imports or exports; imported goods will cost the same as before and exported goods will yield the same as before in terms of foreign money, except in so far as the rise in domestic prices may have varied in the case of the different classes of goods. If, for some reason, the foreign exchange value of the currency has fallen more than its domestic purchasing power, exports will temporarily be stimulated and imports will shrink, and this will tend to restore the market rate of exchange to the purchasing-power parity rate. This restoration might be accomplished, of course, either by a rise in the rate of exchange or a rise in domestic prices, but the latter is a less probable development. This advantage in stimulation of exports is, therefore, merely temporary unless the depreciation of the currency is made progressive with the ultimate result, that the currency will become worthless, as in the case of the old German mark in 1923. Even if this advantage should continue for some time, the question may be raised, Is it a real advantage? When a country carries on foreign trade with its currency depreciated more in the exchange market than in the domestic market, it is in effect selling to foreigners at low prices and buying from them at high prices, and is thus progressively impoverishing itself or reducing the standard of living of its workers, or both, particularly if its foreign trade represents an important part of its industrial life. Perhaps a simplified example will be useful in making this point more clear:

Suppose the Germans buy cotton from us at the rate of twelve cents a pound, or approximately one mark for two pounds, with the mark at the former mint par of exchange of 23.8 cents. Suppose that they work the two pounds of cotton into cloth worth, in our market, five marks, and that German workers get three marks of this and the manufacturers the other two. With the three marks, worth, at 23.8 cents each, approximately 71.4 cents, the German workers can buy, let us assume, twenty pounds of American flour in our market, freight prepaid. Then, to gain the advantages of a depreciated currency in foreign trade, the mark is driven down to half its former value, but German labor is paid at the same rate as before and German goods are sold at the same rate as before in marks. The German laborers can now with their three marks buy only half as much American flour as before depreciation, American prices remaining the same. As for the manufacturers, they must now pay out their two marks for two pounds of cotton to replace the two pounds used up, leaving nothing over to pay interest on their capital,

depreciation, and other expenses of production. Quite obviously the advantage of foreign trade gained in this way is a very doubtful one, and perhaps best not gained.

In our example showing the application of the formula for determining purchasing-power parity, we used the United States, at the time a gold-standard country, and England, a paper-standard country. The formula may be applied as well in calculating the purchasing-power parity of two paper-standard countries, as Germany and France in 1922, using in the formula the mint ratio between the two countries when both were on the gold standard.

Since prices in a paper-standard country tend to vary with the quantity of paper money placed in circulation, and since this tends to vary more than the quantity of a currency based on and redeemable in gold, it follows that prices in a paper-standard country will fluctuate more violently than in a gold-standard country, unless a successful plan of "managing" the currency is developed to keep prices stable. Exchange rates between a paper-standard country and a gold-standard country will, therefore, in the absence of a successfully "managed currency," fluctuate more than exchange rates between two gold-standard countries, and exchange rates between two paper-standard countries will fluctuate even more than those between one paper-standard and one gold-standard country, since in this case the theoretical purchasing-power parity exchange rate will tend to be the function of two extremely variable variables. And the market rate, as previously indicated, may for various reasons fluctuate even more widely than the purchasing-power parity rate around which it revolves. Widely fluctuating exchange rates hamper the conduct of international trade, since importers and exporters must under such conditions assume, not merely the ordinary risks of trade, but the additional risks involved of great and sudden changes in the rate of exchange, not to mention also the great and sudden changes in prices within their own country. In Germany, for example, in 1922, any business man importing goods from France could guess only roughly both at the prices he would receive in marks for the imported goods and the number of marks he would have to pay for a draft for a given number of francs payable in Paris. With these remarks we must bring to a close this discussion of purchasing-power parity and exchange rates — a subject having so many ramifications that a fuller discussion would be justified if space permitted — and pass on to a consideration of the relation between the rates on bankers' sight bills and other forms of exchange, particularly cable transfers and bankers' long bills.

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18, RELATIVE RATES ON SIGHT BILLS AND OTHER FORMS OF EXCHANGE

In the *Commercial and Financial Chronicle* the following closing rates of sterling exchange were quoted on August 30, 1930:

Cable transfers	4.86 $\frac{7}{8}$
Bankers' sight bills	4.86 $\frac{1}{8}$
Commercial sight bills	4.86 $\frac{3}{8}$
Commercial 60-day bills	4.84 $\frac{1}{8}$
Commercial 90-day bills	4.83 $\frac{1}{8}$

It will be noted that on this date cable transfers were higher than bankers' sight bills, bankers' sight bills higher than commercial sight bills, and commercial sight bills higher than commercial time bills. While these exact differences between the various rates would not always hold, the differences are typical, and the rates quoted will, with possible rare exceptions, vary from high to low in the exact order just given. The reason for the difference in the rate on bankers' sight bills and commercial bills has already been given, and it remains to point out why the other differences shown exist.

Cable transfers cost more than bankers' sight bills because money on hand today is worth more than money due in about a week or ten days. How great the difference between these two rates will be depends primarily upon two factors — the rate of interest on short-term funds and the time it ordinarily takes a sight bill to be forwarded and collected by mail. When a banker sells a cable transfer, he gets his money in New York on the same day that his account in London is charged with the amount of the cable. The giving and the receiving of funds is practically simultaneous. But when he sells a sight bill, he is paid in New York perhaps ten days before he loses funds in London. During this period his total amount of funds available in both financial centers combined is greater than before by the amount received for the draft. Some question might be raised on which rate of interest the difference in the rate on cable transfers and sight bills would be based — the rate in New York or the rate in London. Some fine points are involved and the subject is debatable, although offhand it might appear that, since it is in London that the banker's funds are differently affected by the sale of the two kinds of exchange, and not in New York, the London rate would be the controlling one. The banker can afford to take as much less for a sight bill than for a cable transfer as his funds are worth to him in London for, say, ten days. But, on the other hand, the buyer of the cable transfer, with a bill due in ten days in London, has the choice of buying a sight draft now and mailing it or of waiting ten days and buying a cable transfer. He can afford to pay as much more for the cable transfer

as his funds are worth to him in New York for ten days. From this point of view the New York rate of interest would seem to be the controlling rate. For a more detailed and technical consideration of this interesting point, the reader is referred to treatises on foreign exchange.

The difference between the rates on commercial sight bills and commercial time bills involves the same points. The banker buying a commercial sight draft pays out his money today and gets credit for the bill when presented at his correspondent bank in London some ten days later. With the sixty-day bill, however, payable sixty days after sight, he must wait for credit in London for about seventy days, ten days for the bill to arrive, and sixty days after that, provided he holds the bill to maturity. If he sells the bill, he may, of course, obtain his money when the bill is sold, but in that case he will receive only the discounted value of the bill. In any case the time bill will sell below the sight bill — the difference depending upon the number of days it runs and the rate of interest either in New York or London.

The primary purpose of this chapter has been to present those fundamental principles of foreign exchange, some understanding of which is requisite for a proper comprehension of the problem of maintaining a sound banking system. Many technical details which would be found in a treatise on foreign exchange have not been given. But the relation between the mint rate or par of exchange and the market rate, and the relations between the rates on bankers' bills and commercial bills, on sight bills and time bills, on sight bills and cable transfers have been explained. The natural results flowing from a persistent excess of payments due from one country to others over and above payments due to it from others have been pointed out — the gold exports, the restriction of bank credit, the rising rates of interest, and the falling prices. It has been explained further how inflation of the currency by government paper money, or excessive expansion of bank credit may force a country off the gold standard, and how rates of exchange are determined between a country on a paper-money standard and other countries on either a paper or a gold standard, this explanation involving a somewhat detailed consideration of the theory of purchasing-power parity. Finally, the evil influence on international trade that grows out of departure from the gold standard and the substitution therefor of the paper-money standard with its fluctuating prices and changing rates of exchange, has been duly emphasized.

CHAPTER XIV

MISCELLANEOUS FINANCIAL INSTITUTIONS

1. CLASSES OF FINANCIAL INSTITUTIONS

THIS book is concerned primarily with problems of coinage and currency — with the quality and quantity of money and substitutes for money and their relation to the price-level and the general welfare. It is concerned, therefore, primarily with government money and with commercial and central banks, and only incidentally with other classes of financial institutions. These other types of financial institutions cannot, however, be wholly neglected in our discussion because in various ways they are connected with the problems of money and commercial banking. This is particularly true of the following:

1. Savings banks
2. Trust companies
3. Investment banks
4. Stock exchanges
5. Investment trusts
6. Commercial paper and acceptance houses
7. Insurance companies
8. Building and loan associations
9. Agricultural credit agencies

Each of these will be briefly considered in the present chapter. While the discussion of this miscellaneous group of financial institutions at this point will necessitate references to certain details of our commercial banking system not yet explained, an effort will be made to avoid mystifying the reader in these cases. As an offset to this possible disadvantage in the method of presentation will be the advantage of having these various institutions located in the financial scheme as a background for our subsequent discussion of our commercial banking system.

2. MUTUAL AND STOCK SAVINGS BANKS

The savings bank, like the commercial bank, accepts deposits and makes loans and investments, but the nature of its business in both of these aspects differs from that of the commercial bank. Whereas the deposits of a bank doing a strictly commercial banking business, and not operating also as a savings bank, are in the main demand deposits, subject to withdrawal by check without notice, deposits of savings banks

are essentially time deposits, and are not subject to withdrawal without notice, except by express permission of the bank as an act of accommodation to the depositor.

Savings bank deposits ordinarily represent savings of the depositors, usually persons of small incomes who desire to lay something aside for a rainy day, but cannot readily save enough in a short time to invest in stocks or bonds or other types of investments requiring considerable sums of money at a given time. Commercial bank deposits, on the other hand, while they may represent savings of persons of small means, normally represent temporarily unused funds of business men or the unused portion of monthly or weekly salary checks of other persons, designed to be spent for current living expenses or presently invested. In a large measure, too, demand deposits of commercial banks represent the proceeds of loans made by the banks to their borrowers in the form of deposits subject to check, while savings bank deposits do not originate in this way. Interest is regularly paid on savings bank deposits, and quite properly so, but is not usually, and should not, be paid on demand deposits of commercial banks. Savings bank deposits are made for two main purposes — first, to insure the safety of the principal of the depositors, who may believe a deposit in a bank to be safer than a hoard in a tin can on a shelf or a hole in the cellar, and second, to obtain the interest paid, ranging in the United States usually from two to five per cent of the sum deposited.

The savings bank is enabled to pay interest on its deposits for the reason that it invests the sums deposited in interest-bearing bonds and mortgages and to a lesser extent in other forms of loans and investments. Savings banks can safely invest a larger proportion of their funds in long-term investments than can commercial banks for the reason that the former are less likely than the latter to be called upon to pay out large sums of deposits within a short time. They can get along with a smaller cash reserve and also with a smaller secondary reserve in short-term promissory notes or other forms of commercial paper. Since real estate loans and long-term bonds normally average a higher net yield than short-term loans and investments, it follows that savings banks can invest their funds to better advantage than the commercial bank.

In the United States we have, in addition to the Postal Savings System to be discussed in the next section, two important types of savings banks, namely, the mutual savings bank and the stock savings bank. Moreover, a large proportion of our commercial banks and trust companies have in recent years opened a savings bank department and through this department conduct a savings bank business.

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The mutual savings banks do not raise any capital by the sale of stock, but derive all their funds from deposits. Instead of stockholders and a board of directors, they have a board of trustees who manage the bank primarily in the interest of the depositors. All of the income derived from loans and investments, less the amount required to pay operating expenses, either is paid out in interest on deposits or is set aside as a reserve which may be drawn upon in lean years or used to offset losses from bad investments. Bad investments have been few because the banks have been well managed and only the safest types of investments have been selected. The main object has normally been safety with a moderate income, and not a high yield on loans and investments. By a judicious investment mixture of gilt-edged state, municipal, and corporation bonds, and real estate mortgage loans, which, when well selected, are safe and yet yield generous returns because of their non-liquid nature which makes them unattractive to many classes of investors, the mutual savings banks manage to pay operating expenses and have something like four per cent a year left over to be distributed among the depositors upon their respective deposits.

The stock savings bank is operated for profit like any other business corporation. Its funds are derived partly from the sale of stock, but mainly from deposits. It pays whatever rate of interest it must pay as a condition of attracting deposits, invests its funds to the best advantage, in accordance with the restrictions of the law and the judgment of the management, and retains for its stockholders whatever profits are left after paying operating expenses.

On June 30, 1915, the number of mutual savings banks in the United States was 630, and their deposits amounted to \$3,946,000,000, while the number of stock savings banks was 1529, with deposits of \$857,000,000. After that date the stock savings banks declined more or less steadily in number, but their deposits continued to increase until they amounted to \$1,791,000,000 on June 30, 1925. By June 30, 1932, their number had declined to 502 and their deposits to \$833,000,000. The mutual savings banks have declined but little in number since 1915, the number on June 30, 1932, having been 594, and their deposits have shown a steady increase, reaching a new high level during the depression years of 1931 and 1932, the increase in the number of their depositors and the amount of their deposits being a natural result of their excellent record and the relatively small losses suffered by their depositors at a time when other classes of banks were suffering a heavy mortality. At a time when most other banks had failed to do so, these banks held to the principle of placing safety before profit. On June 30, 1932, their deposits stood

at \$10,022,000,000 or approximately two ninths of the total deposits of all banks in the United States at that date.

Obviously, the mutual savings banks constitute an important part of our financial system. It should be observed, however, that their deposits do not form a part of our coinage and currency system as do the demand deposits of our commercial banks. They are not subject to withdrawal by check and are not used as a substitute for government money or bank notes. They represent investments and not circulating currency. Were this not so we should have to devote a great deal more attention to them than we do in this section.

3. THE POSTAL SAVINGS SYSTEM

The Postal Savings System of the United States was established in 1911 in accordance with a law passed in 1910 after several years of public discussion on the advisability of setting up such a system. The administration of the system was placed in the hands of the Postmaster General and a board of trustees consisting of the Postmaster General, the Attorney General, and the Secretary of the Treasury. The system is in effect a great savings bank with thousands of branches, the branches being post-offices designated as postal savings offices by the Postmaster General. By June 30, 1913, the number of offices had grown to 12,158, but later the number declined to less than 6000.

Any person ten years of age or older may deposit sums of not less than \$1, but the maximum deposit which any one person may have at any given time is \$2500. Depositors receive non-transferable certificates of deposit and must be satisfactorily identified upon withdrawal of their deposits. Deposits may be withdrawn at any time, but must be left one year before interest is paid. Interest is at the rate of two per cent a year.

Five per cent of the total deposits are kept in the Treasury of the United States as a cash reserve, and the balance may be invested by the board of trustees in United States bonds or deposited in state or national banks qualifying as depositories of postal savings funds. As a condition of receiving such deposits banks must deposit specified types of United States bonds with the Treasurer of the United States as security. It follows from these provisions that the postal savings deposits are guaranteed to the extent that they are made as safe as the United States bonds in which they are invested or by which they are secured.

Since the banks must pay only two and a half per cent interest on the postal savings deposits placed with them by the Government and can ordinarily lend the funds so received at five or six per cent, it would appear to be a profitable business for them. The apparent profit may

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be much reduced, however, if the banks as a condition of receiving such deposits must first buy low-yielding government bonds which they otherwise would not buy, with money which they might otherwise lend at five or six per cent. Even though for this reason the business may not seem to be particularly profitable to any individual bank, it is probable that the Postal Savings System has tended to increase the earnings of the commercial banks in the aggregate by increasing the total available cash reserves on which credit expansion depends. This statement requires, perhaps, some explanation.

The main argument in favor of the establishment of a postal savings system in the United States was that it would induce many persons of small means who were distrustful of privately owned banks to place their savings with the Government instead of hoarding them. The force of this argument was made the greater, at the time the Postal Savings System was being discussed, by the fact that hoarding had tended to increase after the panic of 1907 when practically all the banks in the United States had been temporarily closed. Hoarding of currency, particularly of gold and other lawful money, tends, of course, to reduce bank reserves, and to the extent that our Postal Savings System coaxed hoarded currency out of hiding and transferred it into hands of the depository commercial banks it increased their aggregate reserves and provided them with the basis of expansion of bank credit in the form of loans and investments to the amount of several times the sum of the hoarded currency.

The banks, however, were less impressed with this argument than with the danger that the guaranty provision of the Postal Savings System would cause their own depositors to transfer their funds to the government system, and that their cash reserves and aggregate business would thereby be reduced. Consequently, the banks as a whole opposed the establishment of a postal savings system. That the banks need not have been alarmed at the danger of the system being detrimental to their business so long as the banks themselves were reasonably sound is indicated by the fact that the maximum balance standing to the credit of postal savings depositors at the end of any fiscal year during the period from 1911 to 1928 was \$167,323,000 on June 30, 1919, and that at that time \$135,943,000 of these deposits were redeposited with the banks. The latter sum was doubtless larger than the amount that would have come to the banks from depositors direct without the guaranty on their savings represented by the government system.

During the whole of the period from 1911 to 1928 average annual deposits made ran close to \$100,000,000, but deposits made were closely

matched by withdrawals, so the fund did not accumulate rapidly at any time and was less in 1928 than in 1919. On the whole during this period the Postal Savings System had not proved to be of very great importance. But with the increase in bank failures and the growing fear of more failures in 1930 to 1932, the deposits by the postal savings depositors increased rapidly, standing at \$347,417,000 on June 30, 1931, and at \$784,819,000 a year later. The increase of \$437,403,000 during this year was the result of deposits made during the year of \$873,882,000 as against withdrawals of \$136,479,000. This large increase in postal savings deposits was the result of transfers of deposits from other banks rather than of deposits of hoarded money, and the increase would have been greater had it not been for the \$2500 limit on deposits. The large sum deposited in the Postal Savings System was not lost to the other banks because most of it was redeposited in those banks by the Government. Presumably if the system had not been in operation much of this money would have been hoarded.

4. TRUST COMPANIES

A trust company acting merely as such is a specialized financial institution performing a variety of fiduciary functions distinct in nature from the ordinary operations of a commercial bank. In the United States, however, trust companies, so-called, have engaged extensively in commercial banking operations, and at the same time commercial banks have performed trust company functions, so that in practice the distinction between trust companies and commercial banks has been in large measure lost.

On June 30, 1932, the number of loan and trust companies in the United States was 1235, as compared with 10,455 state commercial banks and 6150 national banks. The resources of the trust companies on that date amounted to \$13,119,000,000 as compared with total resources of all banks in the United States of \$57,245,000,000. How important were the commercial banking operations of the trust companies is indicated by the fact that their demand deposits on June 30, 1932, were \$5,285,000,000, as against total demand deposits of all banks in the United States of \$16,406,000,000. Trust companies have engaged largely also in savings bank business and in the business of investment banking. But it is with their functions as trust companies proper that this section is concerned.

The term "trust company" has been applied to these concerns because they have presumably been organized primarily for the purpose of acting in the position of a trustee in trust agreements. A trustee is

one of three parties to every trust agreement, the other two being the creator or donor of the trust and the beneficiary. A simple example of a trust agreement would be this:

A, the creator of the trust, places in the hands of B, the trustee, an estate to be handled in the interest of C, the beneficiary. A common form of trust is one in which a wealthy man appoints a trustee to handle his estate in the interest of his heirs in the event of his death. The supposition in this case would be that the trustee would manage the estate more competently than the beneficiaries would.

For various reasons a trust company, particularly if it has large resources and a long-established business, offers advantages over an individual trustee. In the first place, the trust company organized as a corporation has perpetual life, and the trust fund is not endangered by the death of the trustee. The trust company, too, has a valuable reputation to maintain; for it, honesty is the best policy. It can make money in the long run by handling many estates honestly than by losing one and thereby blasting its reputation. Finally, the trust company has better facilities for administering a trust than a single individual. Operating permanently on a large scale it can employ a staff of legal and economic experts and supply such services to its clients at a relatively small expense per dollar of funds held in trust.

In addition to acting as trustees in such cases as just indicated, trust companies act as executors of estates. As such they operate more effectively and economically in trust agreements. reasons that they are more efficient in trust agreements.

Trust companies also perform a variety of services for other corporations, their functions in this respect including that of transfer agent, registrar, and trustee under mortgage agreements. Stock certificates, representing ownership of stock in corporations, should be registered on the books of the corporation in the name of the owner, in order that dividends, notices of elections, annual reports, etc., may be sent to the proper person. Since such certificates are frequently bought and sold, someone must be designated to make a record of the transfers. Ordinarily this work is done by two officials — the transfer agent and the registrar. When a stock certificate changes ownership, it is usually endorsed in blank by the seller and in this form possession of the certificate is evidence of ownership. If the owner loses it, the finder may be keeper, unless the person who lost it can in some way prove it is his. In order to be safe, a new owner should at once either place his certificate in a safe-deposit box or send it to the transfer agent to be transferred on the books of the company and registered in his own name.

When the transfer agent receives a certificate for transfer and registration, he cancels the old and issues a new certificate to be registered in the name of the new owner. Both the old and the new certificates are then turned over to the registrar whose duty it is to examine the old certificate to see that it is genuine — certificates are sometimes counterfeited — and to register the new certificate in the name of the owner. By the process of registration the name of the new owner is not only properly recorded on the books of the corporation, but it is printed also on the face of the certificate, which is not transferable unless endorsed in the presence of a witness. Such an unendorsed certificate legally belongs to the person whose name is inscribed upon it regardless of who may hold physical possession of it.

Although corporations could themselves perform all the details of the work of the transfer agent and the registrar, it has become customary to appoint trust companies as transfer agents and registrars. By appointing separate transfer agents and registrars, who may act as checks on one another, the danger of the issue of fraudulent certificates is minimized. It is obvious that any widespread counterfeiting of corporation stock certificates or the issue of many fraudulent certificates would demoralize the securities market and make it more difficult for corporations to raise capital.

When a corporation raises capital by the sale of a bond issue, these bonds are normally distributed among many investors. To secure the whole issue of bonds the corporation may give a mortgage on its real estate or some other type of security or collateral. Obviously, it is not feasible to distribute this security among all the investors who may have purchased the bonds. It is necessary to appoint a trustee to hold the mortgage or other collateral in the interest of all the investors protected by it. Usually trust companies are chosen as trustees in cases of this kind, and this represents an important function of these companies.

5. INVESTMENT BANKING

In discussing investment banking it is customary to use the term "investment banker" rather than the term "investment bank," for the reason that in this branch of banking the partnership rather than the corporation is the usual form of business organization employed. We are concerned here with natural persons and not with those artificial persons called corporations. The investment banker is a specialized type of banker whose main business is the advancing of large sums of money to governments in exchange for their bonds and to corporations and other similar forms of business organizations in exchange for their

All five of the investment banking houses, members of the syndicate, have in past operations built up a retail selling organization of banks, and through these they distribute the bonds to the general investing public. The retailers pay the syndicate members 98 for the bonds and sell them at par. If the deal goes through smoothly as planned, the originating house earns a commission of one per cent of par on the whole issue, or \$500,000, as a reward for originating the business, and two per cent of par on its \$10,000,000 share of the syndicate deal, or \$200,000, making \$700,000 in all. Each of the other syndicate members earns a commission of two per cent on \$10,000,000 worth of bonds, or \$200,000, and the retailers earn two per cent on the respective amounts of bonds which they sell. If, however, the bankers have misjudged the market for bonds and are able to dispose of the whole lot only by offering them to the general public at, let us say 90, they suffer a huge loss.

The profit indicated is not net profit, but merely gross profit. For the proper conduct of its business the investment banking house requires a staff of experts — engineers to report on the condition of the physical property of the borrowing corporation; accountants to examine its financial condition; and lawyers to dig into the legal aspects of the business. The investment banker, if he is to continue in business, cannot afford to sell to his clients many issues of securities which later turn out to be bad investments.

Investment bankers, when they conduct their business properly, perform some very useful services including the following:

1. They supply governments and corporations with funds in many cases more promptly and economically than the borrowers could obtain these funds in other ways. This is because they are specialists in the sale of securities and have built up an efficient organization for the purpose. The commission which they earn, and which seems to be a deduction from the loan diverted out of the treasury of the borrowers into their own, tends to be less than the cost to the borrowers of organizing a selling force of their own. This statement does not, of course, hold true of an offering of bonds of the United States Government, when the public is eager to buy and no selling pressure needs to be exercised.

2. They supply investors with new issues of securities which may be bought with assurance that they have been examined with care by a staff of experts who would not have approved their issue if they had not been considered economically, financially, and legally sound. The yield on such new issues may be more generous than on outstanding issues which may be bought in the open market, but, even if this were not so, if no new issues were brought out, the supply of outstanding

issues would soon become inadequate to supply the demand, and the yield would decline as investors competed with one another for the shrinking supply and bid up the market price.

3. By directing the flow of savings into sound investment securities the investment bankers perform a useful social-economic function, aiding in the accumulation of capital and preventing its dissipation in unsound and dishonest schemes.

Unfortunately, as the American public has learned to its cost in recent years, investment bankers do not always conduct their business properly. As a result of a combination of mistakes of judgment, incompetence, and downright dishonesty in some cases, investment bankers in the United States during the dozen years following the World War unloaded upon investors several billions of dollars' worth of securities that turned out to be very bad investments, and many of these were intrinsically bad at the time of issue and did not merely become bad through unforeseen and unforeseeable developments of the great depression. In their eagerness to reap a good commission, investment bankers did not hesitate to recommend to their clients, who trusted them, the purchase of securities which either they knew or should have known to be unsound and extremely risky.

In an effort to prevent a repetition of such financial scandals, Congress passed the Federal Securities Act of May 27, 1933. This law required a registration statement to be filed upon the issuance of investment securities. The statement is supposed to give detailed information on the basis of which the investor may judge the worth of the security. If the statement omits a material fact or contains any untrue or misleading statement, the corporation officials and investment bankers responsible for the registration statement are liable to suit for damages. Many persons considered the law as enacted too drastic because it tended not only to prevent fraud but also to prevent the issuance of securities in a legitimate way by corporations and bankers who feared the excessive damages to which they might be subjected under the operations of the law. In 1934 some of those provisions of the law which subject issuers of securities to suits for damages through no fault of their own were amended.

6. INVESTMENT BANKING AND COMMERCIAL BANKING

Investment banking, it should be emphasized, is quite different from commercial banking. The investment banker, as such, is a dealer in, or, one might say, a manufacturer of, long-term securities. He is not directly a manufacturer of short-term credit and currency. He acts

as an intermediate agent in supplying business men with funds which may safely be sunk in plant and equipment — long-term capital. It is not necessary for him to demand the sudden return of the funds he transmits to business men because of demands made upon him for their return to the ultimate investor. No such demands can be made in the nature of the case. On the other hand, the commercial banker must always have a large proportion of his resources so invested that they may be recalled promptly to meet the demands of his depositors. His funds must be provided, one might say, with round-trip tickets. They must always be prepared to return from the commitment in which they have been placed. When the depositors clamor for their money, however unreasonable, they must be paid or the bank must close its doors.

Since these two kinds of banking are so dissimilar in nature, it is obvious that danger lurks in their combination in the hands of a single concern. Despite this fact, our commercial banks, particularly our large metropolitan banks, in recent years engaged extensively in investment banking operations, doing so in many cases by evading laws of the State and Federal Governments prohibiting such a combination of functions. Investment banking houses in turn engaged also in commercial banking operations and developed a demand deposit business. Concerning the abuses that arose out of such practices and the new legal restrictions laid upon them, we shall have more to say in a later chapter.

Although investment bankers should not engage in commercial banking, they may legitimately use the services of commercial banks. In the interval between the time the investment banker pays a corporation for an issue of bonds and the time these bonds are resold to the ultimate investor, he may require a loan to supplement his own capital. In such cases he may obtain a short-term loan from a commercial bank, depositing the bonds temporarily as security for the loan. Out of the proceeds of the sale of the bonds he may then liquidate such loans. Obviously commercial banks should make such loans in moderation and with circumspection.¹

7. COMMERCIAL-PAPER HOUSES

The work of commercial-paper houses is like that of investment bankers in that they facilitate the transfer of funds from a group of investors to large corporations. But while the investment bankers deal for the most part in long-term securities — stocks and bonds — the commercial-paper houses deal in short-term loans, and the credit instrument used is called "commercial paper." The term "commercial paper" used in this sense has a narrow technical meaning, and must be distinguished

¹ See pp. 704-705 for an explanation of the restrictions imposed on bank security and underwriting operations by the Banking Act of 1933.

from the broader use of the term as applied to a wide range of short-term promises of business men to pay, including ordinary promissory notes and trade acceptances. In the narrow technical sense commercial paper means short-term notes, with a maturity usually of from two to six months, issued by business concerns as a means of raising large sums of money in the open market as an alternative to borrowing from their commercial banks. Instead of issuing one large note for the total amount of the loan desired, the concern issues a number of notes usually of the denomination of \$5000 to \$10,000, a \$500,000 loan, for example, being broken up into one hundred \$5000 notes.

The method of marketing such paper varies, but the following would represent a typical transaction between a borrowing corporation and a commercial-paper house:

Commercial-paper house A agrees to buy \$1,000,000, par value, of the six-month notes of Corporation X, at a time when such notes may be sold to yield four per cent. Under these circumstances competition would compel the commercial-paper house to buy these notes at a discount from par of two per cent, a discount of two per cent for six months being at the rate of four per cent a year. From the discounted value of the notes the commercial-paper house would deduct its commission of one fourth per cent, leaving for the corporation 97.75 per cent of par, or \$977,500 for the \$1,000,000 issue. If the commercial-paper house should now hold the notes until maturity, it would earn both the discount and the commission, or a sum of \$22,500. Ordinarily, however, it will try to sell the notes to other investors at the current rate of discount, and thus free its own capital for another deal, in which it may quickly earn another commission of one fourth per cent. Obviously, if it can sell the notes at a lower rate of discount than the rate at which it purchased them, it will make a profit in addition to its commission.

Such notes are customarily made payable to the order of the corporation that issues them and endorsed by anyone, and the commercial-paper house assumes no liability for their payment to the ultimate investor. The chief buyers of commercial paper are the commercial banks. For them it represents a desirable form of short-term investment and becomes a part of their secondary reserve. It is usually a safe investment because only corporations with a high credit rating can sell their paper in this way in the open market, and the notes being of near maturity their price cannot fluctuate much as a result of changes in the current rate of discount. In this respect it represents a better form of secondary reserve than government bonds, even though it cannot be more readily converted into cash. Commercial paper of this type may

also be bought by the federal reserve banks, as will be explained later, and by any other investors who desire this sort of investment in lots of \$5000 or more.

The chief advantage of this mode of borrowing to a corporation is that in some cases it is thereby enabled to borrow larger sums and at a lower rate of interest than would be possible at its commercial bank. The sum required by the corporation might exceed the amount its bank would be permitted to lend to any one person or concern at any one time, which for national banks and state banks in some states has been ten per cent of their capital and surplus. As for the rate of discount, the demand for prime commercial paper is sometimes so strong that, even after making allowance for the commercial-paper house's commission of one fourth per cent, the rate of discount is lower than the rate on loans to their customers at the commercial banks. Moreover, there is a banking custom which requires the customer of a bank to maintain a certain minimum deposit, perhaps twenty per cent of the customer's line of credit, so that a borrower obtaining a loan of \$1,000,000 might be required to leave \$200,000 of it on deposit, unused.

There is some controversy as to the importance of the advantages gained by business concerns in such open-market borrowing as compared with ordinary bank loans. If one may judge from the statistics on the amount of commercial paper outstanding as compared with the total amount of bank loans, the advantage is not very marked. At no time during the last ten years has the total amount of commercial paper outstanding represented a considerable fraction of the amount of bank loans, and in recent years its relative importance has tended to dwindle. At the end of June, 1925, for example, the amount of commercial paper outstanding in the United States was \$759,000,000, while the total loans of all member banks of the Federal Reserve System were \$20,655,000,000. At the end of June, 1929, before the industrial depression had got under way, the amount of commercial paper outstanding had dwindled to \$274,000,000, while the amount of member bank loans had grown to \$25,658,000,000. There was a substantial increase in the amount of commercial paper in 1930 and 1931, but after that the amount outstanding declined again until in 1932 it fell below \$100,000,000.

The fact that the total business available is relatively small and that what there is of it can be handled advantageously only in relatively large amounts explains why there are so few commercial-paper houses in the United States. Most of the business is done by a dozen or less of large houses with their branches, and the remainder by a somewhat larger number of smaller houses.

MISCELLANEOUS FINANCIAL INSTITUTIONS

The market for listed securities is normally highly competitive, and sellers may obtain without undue delay the best price obtainable under market conditions at a given time, and buyers can buy with the assurance that they are not paying more than other buyers at the same time. In such a market both buyers and sellers have the benefit of the consensus of opinion of all the operators in the market. If they buy or sell at the wrong price, it is because the market as a whole has misjudged the value of securities. The market as a whole does, of course, at times misjudge the value of securities, and this gives traders and investors whose judgment is better than that of the market as a whole an opportunity to realize handsome profits. In 1929, for instance, the market grossly overestimated the value of stocks, and in June, 1932, it underestimated their value.

Since investors and speculators will be more ready to buy stocks and bonds if they know that in case of need they can dispose of them without delay and at a fair price, all conditions taken into consideration, the existence of a stock market makes it easier for investment bankers to float new issues of securities. Corporations are thus more readily placed in possession of the savings of small investors to be used in the expansion of their plants, and the accumulation of capital is thus facilitated. This fact is overlooked by critics of the stock exchange who hold that it performs no useful function, since it does not directly engage in the flotation of new issues of securities. To such critics all the buying and selling operations on the exchange seem to represent wasted energy, and they favor the abolition of the institution. The abuses which unfortunately develop in the regular operations of stock exchanges arouse much criticism and a desire in some quarters to restrict or abolish such operations. It should be borne in mind, however, that, while it would be possible to drive such abuses out of organized exchanges by destroying the exchange, the abuses would still persist and probably grow in unorganized trading. There is doubtless more swindling perpetrated even now in unorganized trading than on the floor of the stock exchange. The much-discussed Securities Exchange Act of 1934, commonly referred to as the Fletcher-Rayburn Bill, represents an attempt to regulate the stock exchanges of the United States with the aim of preventing abuses without destroying their usefulness.

* 10. THE STOCK EXCHANGE AND COMMERCIAL BANKING

In our discussion of commercial banking, our interest in stock-market activities is centered in the loans of commercial banks to brokers and others to finance their trading in securities. Here three types of loans

must be considered, namely, the loans made by banks to brokers, the loans made by banks to their own customers, and the loans made by the banks to traders in securities on the account of others. Consider first the loans made by banks to brokers.

A large proportion of trading in stocks is done on margin, for strictly speculative purposes. A hypothetical case will explain what is meant. A speculator buys through a member of the stock exchange a batch of stock exceeding in value his own available funds, to be held for a turn, perhaps for only an hour, perhaps for a day, a week, or a month, depending upon the action of the market. He places in the hands of the broker, for example, \$6000 with an order to buy for his account 100 shares of American Can at 100, the total value of the stock being then \$10,000. The broker must pay for the stock in full, and either must advance the difference between the "margin" put up by the customer and the amount paid for the stock, \$4000, or borrow that sum. The usual process is to pledge the stock purchased for a loan at a commercial bank, particularly when the market is active and the broker's own funds are inadequate. Such loans may be call loans, payable upon twenty-four hours' notice, or time loans, running perhaps three or four months. In any event, the bank insists upon the loans being properly secured, and if the stocks pledged as collateral decline in value, the banks will demand either that more collateral be pledged or that the loans be reduced. The broker, in turn, will demand of the purchaser that he put up more margin. Under the Securities Exchange Act of 1934 the maximum loan on securities is fixed at 55 per cent of the current market price, or 100 per cent of the lowest price in three years, whichever is higher.

Many investors and speculators who have a line of credit at a bank prefer to borrow directly from the bank in order to carry stocks in excess of the amount they can buy with their own funds rather than obtain such loans from brokers. It is held by some writers that this class of borrowers is of a more solid type than the class that deals on margin directly with brokers, and that their commitments are more likely to be for the "long pull" than the commitments made directly through the brokers. However this may be, the effect upon the stock market and upon the banks is much the same as if these loans were made through the brokers.

The third-named class of stock-market loans developed on a large scale in 1928 and 1929 near the apex of the long-drawn-out bull market of 1922 to 1929. They grew largely out of the circumstance that many large corporations had accumulated from net earnings or sale of their securities large sums of money which were not at once required for per-

manent investment in their business. Attracted by the high rate of interest paid on stock-market loans they placed many hundreds of millions of dollars of such funds in the hands of the metropolitan banks to be lent for them on stock-exchange collateral. Such loans had the same effect on the stock market as an equal amount of loans of the banks' own funds, but the effect on the position of the banks was different from the effect that would have been produced if the corporations had placed these funds on deposit in the banks, and the banks then had advanced the funds to speculators on their own account.

None of these three classes of loans, except possibly the last-named, is bad *per se*. But whenever any of the three, or the three combined, come unduly large, they represent a dangerous type of inflation of the currency because every loan made by a bank, whether for its own account or the account of others, tends to result in the creation of a bank deposit of the same amount, and expansion of bank deposits, as we have seen, represents inflation just as truly as expansion of government paper money or bank notes. Expansion of such stock-market loans once well under way grows by what it feeds upon. The more freely such loans are made, the more freely stocks may be bought. The more freely stocks are bought, the higher tends to become their prices, and the more valuable they become as collateral to be pledged for more loans, which when made permit the stocks to rise in price again. Thus the interrelation of the stock market and the commercial banks may generate a stock-market boom, and prices of stocks may rise, if the speculators are sufficiently optimistic, to fantastic levels, making certain an eventual disastrous crash. Such was the situation that developed in 1929. Once prices of stocks begin to fall, loans begin to be called, and speculators are forced to sell on a weak market. This precipitates further declines and more calling of loans and more declines in a vicious descending spiral. Because of the evil results flowing from the enormous amount of security loans made by the banks for the account of others in 1929, the Banking Act of 1933 prohibited member banks of the Federal Reserve System from making such loans in the future.

11. INVESTMENT TRUSTS

Broadly speaking, the term "investment trust" as used in the United States is a misnomer, because very many of the so-called investment trusts are not true trusts at all, but merely investment companies which sell their own stocks and bonds to investors in order to raise money to invest in the securities of other corporations. Out of the income received from their investment in other companies, they may pay interest

and dividends on their own stocks and bonds. Investment companies of this type developed on a considerable scale in the United States only after 1924. The number of investment companies grew rapidly from 1924 to 1929, and about \$4,000,000,000 of capital was invested in them by the purchasers of their securities, mainly common and preferred stocks and trust certificates. This enormous sum was in turn invested by the investment trusts in securities of other corporations, mainly in the common stocks of our leading industrial, railroad, and public utility corporations. For the most part these investments were made near the apex of the great bull market which collapsed disastrously in 1929, with the result that the investors in the trust securities soon had a realized or paper loss of the major part of their investment.

The investment trusts vary in form of organization, but as developed in the United States they fall into two main classes, namely, the fixed trust and the management trust. The fixed trust raises its capital by the sale to the general public of its trust certificates — that is, certificates of participation in the assets and income of the trust. The funds thus raised, less a substantial management fee, are invested in a specified list of common stocks of corporations. These stocks are then placed in the hands of a trust company to be held in the interest of the trust certificate-holders. Thereafter the market value and the income of the certificates will vary with the market value and the income of the stocks thus held in trust. The trust agreement is to the effect that there shall be no buying and selling of underlying securities except in some specified contingency, as when dividends are discontinued on any of the stocks held, in which case the shares of this stock may be sold and the proceeds distributed among the certificate holders.

The management trust is an investment and stock trading company rather than a trust. The management may trade in stocks with the money of their stockholders as they see fit — like any ordinary speculator buying today and selling tomorrow.

The investor is supposed to derive two advantages from this mode of investment. He obtains the advantage of diversification by having his money invested in numerous corporations even though he may have only a few hundred dollars to invest, and he enjoys the advantage of having his investment managed by competent specialists in investment. In the case of the fixed trust, the management is limited to the original choice of the specified securities; in the case of the management trust, it is unlimited. In respect to the advantage of diversification — it may easily be overrated. An investor with the sum of one thousand dollars to invest can diversify by buying only one or two shares in a list of several

corporations, and if he does not have this much to invest he will be well advised to place his money in a good savings bank.

As for the advantage of competent management, the organizers of a large proportion of our investment trusts displayed most amazing competence in management by choosing a period of wild speculation and unreasonably high prices in which to invest their funds. Even worse than incompetence, some of these promoters of investment trusts may be charged with downright dishonesty, or at least with the intent of hoodwinking those unfortunate investors who entrusted their money in these enterprises. One need only to read the details of the financial set-up of some of the so-called investment trusts, to see clearly that the intent of the promoters was to use the investor's money at the risk of the investor and for the possible profit of the promoter. In some cases, at least, it seems that investment trusts were organized with the purpose of unloading upon them at high prices corporation stocks owned by the promoters themselves, which if dumped on the open market could not have been disposed of at such fancy prices. The perpetration of such frauds was made possible only by the gullibility of many investors and speculators in the "new era" period of 1928-29.

With honest and competent management investment trusts might prove to be useful institutions in the United States, despite their first disastrous years. They might permit investors of small means to participate in the profits of leading corporations in a period of prosperity and to enjoy a larger return on their savings than the rate of interest paid by savings banks, and they might in this way not only contribute to the accumulation of capital, but, what is more important, to a wider diffusion of the ownership of capital. But they have yet to prove their usefulness in this respect.

12. LIFE INSURANCE COMPANIES

Insurance policies, whether payable at the death of the insured or in a lump sum after a specified term of years or in the form of monthly payments after the insured reaches a specified age, as sixty-five years, are a form of investment. They are similar in some respects to deposits in savings banks or to investments in government bonds. There is, however, this important difference that the insurance companies, in making an agreement to pay a lump sum at the time of the death of the insured regardless of the amount of premiums that may have been paid in, assume a definite risk, and the premiums paid by the insured must cover this risk. The result is that sums paid in to the insurance companies represent only in part investment; in part they represent payment

for the risk assumed by the companies of having to pay back in some cases more than they receive. Some policy-holders, or their heirs, receive more than a fair return on the investment or savings made, and others receive less. Insurance companies may be said to compete with savings banks for the savings of the people. They do not in the same sense compete with the investment banker, for the reason that a large proportion of their funds are ultimately invested in the product of the investment banker — corporation bonds. Insurance companies compete with commercial banks in the field of investment; they buy to a considerable extent the same type of investments in which commercial banks invest some of their funds — that is, bonds and mortgages and short-term commercial paper.

13. BUILDING AND LOAN ASSOCIATIONS

Building and loan associations represent a form of co-operative credit institution and the only type of co-operative credit institution that has developed on a large scale in the United States. The funds of the building and loan association are employed mainly in making loans to its members for the purpose of building or buying a house, ordinarily as a home and not merely as an income-yielding investment. The funds are derived mainly from the sale of stock in the association on the installment plan. Dividends on full-paid stock can be paid out of interest received on the loans. Not all stockholders of the association need be borrowers from it. Some may buy stock merely as an investment without intention of applying for a loan. Usually, however, borrowers must become stockholders as a condition of obtaining loans, and as they pay their regular installments on their stock they are in effect gradually liquidating their loans. Loans made are usually secured by real estate and the pledge of the building and loan stock itself, the security covering the amount of the loan by ample margin at the time the loan is made.

Where these concerns have been well managed — and their record on the whole in this respect is good — their shares have proved to be good investments, yielding a substantially higher return than savings banks deposits or government bonds. Their expenses are small and almost the total return from loans accrues to the benefit of the stockholders. Often the demand for loans is greater than the supply of funds available, and borrowers under the system used compete for loans by offering premiums above the regular rate of interest — those offering the highest premiums obtaining the loans. Another source of income has been the penalties applied to subscribers of stock on the installment plan who have not properly kept up their payments. As a result of these various

sources of income the stock has generally paid good dividends, as high sometimes as nine per cent or more on par.

It would seem that the building and loan associations, although organized first primarily in the interest of borrowers, have proved to be even more advantageous to investors in their stock than to borrowers. This is true because by the system of premiums paid on loans the actual rate of interest has often been very high. Moreover, by the involved system of bookkeeping employed, the borrowers are often misled as to the actual rate of interest paid on their loans—the apparent rate being perhaps six per cent, while the actual rate is eight per cent or even ten per cent or more.

Obviously, building and loan associations compete with banks both in collecting funds and in investing them. To some extent, however, the funds paid into building and loan associations would not be saved except for this method of saving offered, and the loans would not be made by commercial banks. In some cases commercial banks have used a building and loan adjunct as a convenient method of making real estate loans, clearly an undesirable development.

At the end of the year 1931, the number of building and loan associations in the United States was 11,432; total membership was 11,324,608; and total assets were \$8,412,368,518. Failures generally have been few, but increased during the recent depression. Aggregate estimated losses in 1930 and 1931 were, however, less than \$50,000,000. Dividends have in many cases been suspended in recent years, and stockholders have been unable to withdraw their funds.

14. HOME-OWNERS' LOAN CORPORATION

As a result of the prolonged depression and the severe decline in real estate values, many home-owners, with relatively heavy mortgages on their homes, found themselves in financial difficulties in 1932, and Congress undertook to provide relief for them by creating the home-loan discount banks somewhat similar to the agricultural credit banks which will be described in the next section. These home-loan banks not proving to be particularly effective, additional relief measures were provided for in the Home-Owners' Loan Act of 1933. The purpose of this act was to provide emergency relief with respect to home mortgage indebtedness and to refinance home mortgages. The law created a Home-Owners' Loan Corporation, with a capital of \$200,000,000, subscribed by the Treasury Department. This corporation was authorized to issue \$2,000,000,000 in eighteen-year four per cent bonds, tax free, and with interest not principal, guaranteed by the

Federal Government. By an Act of Congress of April, 1934, the principal as well as the interest of these bonds was guaranteed by the Government. In brief, the plan of relief involved the exchange of these bonds for the privately owned mortgages on homes. It was expected that the holder of the mortgage would agree in some cases, at least, to cut down somewhat his claims, on the assumption that the bonds represented a safer investment than a not very adequately secured mortgage. Naturally, many mortgage-owners did not relish the idea of relinquishing a mortgage yielding six per cent or more for a somewhat smaller amount of four per cent bonds, particularly in view of the fact that the market price of the bonds sagged substantially below par.

15. FEDERAL LAND BANKS

The peculiar credit needs of the farmer have never been quite adequately met by commercial banks, investment bankers, building and loan associations, insurance companies, and other privately owned and operated financial institutions. To meet the farmer's needs more adequately, special types of banks have been provided by federal legislation, namely, federal land banks, joint-stock land banks, and intermediate credit banks, each of which may be briefly considered.

The federal land banks were devised for the purpose of making long-term mortgage loans to the farmer for such purposes as the original purchase of a farm, the purchase of an additional piece of land, or the construction of expensive durable improvements such as barns, or drainage systems. Such loans, of course, could in many cases be had from retired farmers and other individual local money-lenders familiar with the mortgaged property, from local agents of large insurance companies, and to some extent from local commercial banks, which sometimes unwisely made excessive loans of this type. But interest rates were usually relatively high, convenient terms of payment could not always be arranged, and sometimes loans were not available at all.

Under the Federal Farm Loan Act of 1916 twelve federal land banks were established, one in each of twelve land-bank districts. The banks were placed under the supervision of the Federal Farm Loan Board, composed of the Secretary of the Treasury and six other members. Each federal land bank was managed by a board of seven directors, of whom three were appointed by the Federal Farm Loan Board, and three elected by the farm loan associations to be described below; one was to be appointed by the Farm Loan Board from a list of nominees submitted by farm loan associations. Each land bank had a capital to start with of \$750,000, divided into \$5 shares to be purchased as far as

possible by the farm loan associations, but by the Federal Government if necessary.

Under the Act of 1916, the federal land banks were to make loans only through the agency of national farm loan associations. Any ten or more natural persons, owners or prospective owners of farm land, might unite to form such an association. The members of such associations were required to subscribe to the stock of their associations to the extent of five per cent of the amount they desired to borrow, such stock being subject to double liability. As security for their loans, members of the association made out mortgages on their farms in favor of the value of the land and twenty per cent of the value of the improvements. These loans were then endorsed by the associations in favor of the land bank of their district, and the associations subscribed to stock in the land bank to the amount of five per cent of the loans by the sale of its bonds to investors, the bonds being exempt from all federal, state, and local taxation. In short, the loans obtained by individual farmers came to them from the investing public through the agency of the land banks and the national farm loan associations. The federal land bank bonds were the direct obligation, not only of the particular land bank which issued them, but of the twelve land banks combined, and they were secured by the mortgages given by the borrowers as well as by the capital of the federal land banks and the national farm loan associations.

These bonds have been considered good investments and except in times of abnormal depression have found a ready market at around par when offered with a coupon interest rate of from 4 per cent to 4.75 per cent. This has permitted the federal land banks to make loans to the farmer at a rate varying from 5 to 6 per cent, the difference between the rate paid by the farmer and the rate paid on the bonds covering the operating expenses of the land banks. To make the loans more attractive to the farmer, provision was made for the gradual repayment of the principal in from five to forty years, according to the plan of amortization adopted. A comparatively small sum in addition to interest payment paid in annually permitted the borrower to extinguish his debt, the interest plus amortization payment in many cases not exceeding the rate of interest alone paid on loans obtained from other sources.

Nevertheless, the loans made by the federal land banks failed to grow to a very substantial proportion of all farm mortgage loans. At th

end of September, 1932, the total amount of federal land bank mortgage loans outstanding was only \$1,128,530,000, or a little more than one tenth of the total farm mortgage indebtedness at the time, and less than the amount of farm mortgage loans held at the time by insurance companies. It is probable that the usefulness and growth of the federal land bank loan system was severely hampered by the provisions of the law requiring farmers to organize local co-operative associations as a condition of obtaining loans. American farmers do not co-operate readily, and many potential borrowers from the land banks did not understand the farm loan associations and disliked the idea of investing money in their stock.

In 1933, as part of the emergency legislation of the Roosevelt Administration, the Federal Farm Loan Act was amended in order to provide more liberal credit facilities for the farmer. The market price of the regular federal land bank bonds having fallen so far below par that new 4 per cent issues could not be sold except at a very substantial discount, the new law provided that until such time as the regular farm loan bonds were readily salable to yield not in excess of 4 per cent a year, federal land banks might issue farm loan bonds bearing interest at 4 per cent a year to the amount of \$2,000,000,000, the interest on these bonds to be guaranteed by the Federal Government. Funds so raised were to be used for making new loans or for purchasing old mortgages, or the bonds themselves might be exchanged for existing mortgages. An important provision of the amended law was that loans might be made to the amount of fifty per cent of the "normal" value of the land and twenty per cent of the value of the improvements, this sum being, of course, in excess of the depressed market value of the land in 1933. It was further provided that interest charged on such loans should not exceed 4.5 per cent a year and that no payment on the principal should be required for five years. If no federal farm loan association had been formed in any locality, the federal land bank was authorized to make loans under certain conditions directly to the individual farmer.

By an Act of Congress of January 31, 1934, further provision was made for farm loans by the establishment of the Federal Farm Mortgage Corporation with a capital of \$200,000,000 subscribed and owned by the United States Government. The Corporation was authorized to issue bonds to the amount of \$2,000,000,000, guaranteed as to principal and interest. The Corporation may exchange its bonds for consolidated farm loan bonds issued by the federal land banks, and may also make loans to federal land banks on the security of consolidated farm loan bonds. No additional bonds with interest guaranteed by the Govern-

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ment are to be issued by the federal land banks under the 1933 amendment to the Federal Farm Loan Act as described above.

16. JOINT-STOCK LAND BANKS

The Federal Farm Loan Act of 1916, in addition to setting up the federal land bank system, provided for the establishment of joint-stock land banks. These were to be privately owned credit corporations operating for profit rather than government supported co-operative banks. It was expected that under this provision of the law existing farm mortgage companies might organize as joint-stock land banks and operate on a more efficient basis. The joint-stock banks were authorized to issue farm mortgage bonds as a method of raising money to finance farm mortgages. The amount of bonds which any joint-stock land bank could issue was limited to fifteen times the amount of its capital stock. As it turned out, this amount of bonds was excessive for a period of depression in which many of the mortgages bought by the banks proved to be bad investments exceeding the eventual market value of the land by which they were secured.

For a time it seemed that these banks would prove highly successful. In 1924 there were 64 of them in operation, and in that year they had mortgage loans outstanding to the amount of \$446,429,000. After 1924 they declined in number, although their outstanding loans continued to grow until at the end of 1927 the amount was \$669,798,000. On September 30, 1932, only 48 remained in operation, with net mortgage loans of \$451,062,000. All these banks suffered from the unprecedented depression which severely affected the value of their assets, and some of them suffered also from incompetent or dishonest management. Their record and their financial condition were finally considered so unsatisfactory that in the amendment to the Federal Farm Loan Act of 1933 provision was made for their liquidation.

17. FEDERAL INTERMEDIATE CREDIT BANKS

The federal intermediate credit banks were established under the provisions of the Agricultural Credits Act of 1923. Twelve of these banks were created, one in each city where a federal land bank was situated. The directors of the federal land banks became *ex officio* directors of the intermediate credit banks, so the two classes of banks were under the same general management, but they were otherwise separate institutions. The purpose of these banks was to advance loans to farmers for periods of from six months to three years — that is, for longer periods than loans commonly made by commercial banks and for shorter terms

than the ordinary farm mortgage. Farmers require such intermediate term loans to finance the feeding of livestock, the purchase of agricultural implements, and even the growing of crops. For example, between the time a farmer buys a bunch of calves and the time he markets them as corn-fed steers, a period of two or three years may elapse. Loans of this type when obtained from local banks might be called at an inconvenient time, and when obtained in the form of credit from local merchants tended to involve high interest charges.

While the intermediate credit banks were not to make loans directly to farmers individually, they were to advance funds to them indirectly in two ways. First, they were authorized to discount for or purchase from banks, agricultural credit associations, livestock companies, or co-operative marketing associations, notes, drafts, or bills of exchange, the proceeds of which had been advanced or used in the first instance for agricultural purposes. Under this provision of the law the intermediate credit banks were enabled to discount for commercial banks agricultural paper not eligible for rediscount at the federal reserve banks, as discussed in later chapters, and thereby made it possible for these banks in turn to extend loans more freely to their farmer customers. The second method of advancing funds to agricultural interests consisted in the making of direct loans to co-operative associations engaged in producing and marketing staple agricultural products or livestock, up to seventy-five per cent of their value, the security in this case being notes collateralized with warehouse receipts, shipping documents, or mortgages on livestock.

It may be observed that while these many-sided and elaborate provisions made for agricultural credits showed good intentions toward the farmers and have proved very useful in many cases, they have tended to overemphasize the importance of special credit facilities for agriculture and have distracted attention from the more fundamental difficulties of the farmer. Certain additional provisions relating to agricultural credits in the emergency legislation of 1933 will be omitted from consideration here for lack of space. But attention must be called to the President's executive order of March 27, 1933, which consolidated the Government's various credit agencies to form the Farm Credit Administration. This order was issued in the interest of efficiency and economy.

CHAPTER XV THE FIRST AND THE SECOND BANK OF THE UNITED STATES

1. COLONIAL BANKING

With the present chapter we enter upon the consideration of banking theory with special application to the development of banking in the United States. Here the main point of interest will be the banking system of the United States as it has been operating in recent years and as it is operating at the present time. But since no one can understand well the nature of the present banking system without first having made some study of the earlier banking development of the country, it will be necessary to devote not a few pages to a discussion of the First and the Second Bank of the United States, the nature of state banking before the Civil War, and the National Banking System in operation from 1863 to 1913.

In the American colonies banking as we understand it today was practically, if not altogether, unknown. The various early banks concerning which information is available were not primarily banks of discount and deposit, as are our commercial banks today, but primarily banks of issue. That is to say, they were not organized to receive deposits of temporarily idle funds to be held in checking accounts for the convenience of depositors, or to make regular short-term loans to business men in the form of deposits subject to check. Rather they were organized to place in circulation an issue of paper money, and have been aptly defined as "simply a batch of paper money" — this batch of money itself being referred to as the bank. In general it may be said that the notes were placed in circulation as loans to borrowers, and the borrowers might be the very men who organized the bank, and the security offered to the bank consisted in the main of mortgages on real estate. There might be no provision for the redemption of the notes other than the sums received in repayment of the loans made through their issue. If the notes were presented for payment before such loans were repaid in whole or in part, they could not be redeemed. They might be automatically retired if presented to the bank that issued them by the borrowers in repayment of their loans. It was only to be expected that bank notes issued under such circumstances would in many cases become irredeemable and worthless.

2. SOME EARLY BANKS IN THE UNITED STATES

A more useful and sounder institution than such colonial banks was the Bank of North America, sometimes called the first bank in the United States. It was chartered by Act of the Continental Congress in 1781 with a capital of \$400,000, most of which was subscribed by the Government. It was planned by Robert Morris, the Superintendent of Finance, for the purpose of giving financial support to the Government. While most of the capital was subscribed by the Government, it was a privately operated bank and not a government institution. It rendered great public service during the later years of the Revolutionary War by extending loans to the Government and by discounting the notes of individuals who held claims against the Government.

The bank issued notes redeemable in Spanish dollars and these circulated at par. Doubt having been expressed as to the power of Congress to grant a bank charter, the Bank of North America obtained a charter from the State of Pennsylvania under which it operated until 1864, when it once more obtained a national charter upon entering the National Banking System.

Two other early banks in the United States were the Bank of Massachusetts, chartered in 1784 and located in Boston, and the Bank of New York, located in New York City, which began business in 1781. These two banks were the forerunners of the very large number of state banks established in later years.

3. THE FIRST BANK OF THE UNITED STATES ESTABLISHED

The First Bank of the United States was established by an Act of Congress of February 25, 1791, entitled "To incorporate the subscribers to the Bank of the United States." It may not be amiss to remark that this bank became known as the *First* Bank of the United States only after its charter had expired and it became necessary to distinguish it from its successor, the *Second* Bank of the United States. During its lifetime it was known merely as The Bank of the United States. This bank was established by Congress in accordance with suggestions made by Alexander Hamilton in his report on the subject of a national bank read in the House of Representatives in December, 1790. In his report Hamilton stated his convictions that a national bank would be an institution of primary importance to the successful administration of the finances of the country. He pointed out the advantages that had accrued to the Government and to business from the development of banks in Italy, Germany, Holland, England, and France. A bank such as he proposed would be useful, he argued, in various ways:

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1. It would increase the active and productive capital of the country.
2. It would be in a position to extend credit to the Government in case of need.
3. It would facilitate the payment of taxes by extending loans to taxpayers, by increasing the quantity of money in circulation, and by providing a form of money — bank notes — which could be transmitted from one part of the country to another with less trouble, delay, expense, and risk than metal coins.

Considering the early date at which it was written, Hamilton's report on the bank represents an astonishingly able performance, and surpasses in lucidity of argument and clarity of perception of fundamental banking principles much that has been written on banking by statesmen and students of banking of later days. If the report is subject to criticism, it is on the point that it might be thought to imply that the more money a country has the better off it is, and on this point this may be said: Hamilton doubtless did not believe in an unlimited expansion of money and bank credit, and at the time he wrote the country was actually suffering from an insufficient supply of good money and bank credit for the efficient conduct of business.

In respect to the powers conferred upon the bank and the details of its organization, Congress in large measure, but not completely, followed Hamilton's suggestions. As provided by Congress, the bank was to have a capital stock not to exceed \$10,000,000, divided into 25,000 shares of a par value of \$400 per share, of which \$2,000,000 was to be subscribed by the Government of the United States and \$8,000,000 by other subscribers. The capital subscribed, except that subscribed by the Government, was to be paid to the bank one fourth in gold and silver and three fourths in 6 per cent government bonds (then commonly called stock), both the specie and the bonds being payable in four equal installments spaced six months apart, the first to be paid at the time of subscription. The Government's subscription was to be paid out of a loan obtained from the bank itself, the loan to be repaid in ten equal annual installments.

The bank was to be governed by a board of twenty-five directors, elected by the stockholders under a plan suggested by Hamilton to prevent domination of the bank by a few large stockholders. Ownership of one share gave the stockholder one vote, and the maximum number of votes for any one stockholder was thirty. This provision for restricting the number of votes that might be cast by one stockholder to thirty was easily circumvented, however, by the simple device of dummy stockholders who might vote the shares of the large stockholders.

The bank was given the power to issue bank notes which, while not legal tender, were to be receivable in all payments to the United States. The total quantity of such bank notes issued was limited to a maximum of \$10,000,000 by the provision that the total debts of the bank at any given time, "whether by bond, bill, or note, or other contract, shall not exceed the sum of \$10,000,000, over and above the monies then actually deposited in the bank for safe-keeping." This provision is of particular interest from the viewpoint of banking theory because it limited the note-issue liability of the bank, while placing no limitation on deposit liability. The reason for this distinction was that the common conception of bank deposits at that time was of funds actually deposited with the bank rather than liabilities arising from the granting of loans, quite analogous to bank notes. In view, however, of the fact that the use of checking accounts was then not so common as now, and banks did not so frequently make loans in the form of deposits subject to check, the failure of the law to limit the bank's deposit liability was less significant than might now appear.

The absence of a restriction on deposit liabilities did not result apparently in an undue expansion either of deposits or of loans. Regular reports of the bank's condition during the twenty years of its existence are not available, but two reports, made by Secretary Gallatin in 1809 and 1811, show circulation of notes of \$4,500,000 to \$5,000,000; individual deposits of \$5,900,000 to \$8,500,000; loans of about \$15,000,000; and specie of about \$5,000,000. How little tendency toward inflation there is shown by these figures will be apparent if we note that the population of the country was then in round numbers 7,000,000, so that the note issues were less than one dollar per capita, and the loans at their maximum but little more than two dollars per capita. There were in the country at this time some other banks performing all three of the fundamental functions of banks — accepting deposits, issuing notes, and making loans. The number of these banks increased from three in 1784 to eighty-eight in 1811, but the total circulation was not excessive, having reached only \$28,000,000 in 1811, or less than four dollars per capita, including the circulation of the Bank of the United States. This represents only a small fraction of the per capita bank-note circulation in the United States at the present time, which happens to be somewhat excessive.

The Bank of the United States was wisely prohibited from ownership of any real estate except "only such as shall be requisite for its immediate accommodation in relation to the convenient transacting of its business, and such as shall have been *bona fide* mortgaged to it by way

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of security, or conveyed to it in satisfaction of debts previously contracted..."

Contrary to Hamilton's judgment the directors were empowered to establish offices (branches) wherever they saw fit within the United States, and were not required to wait, as Hamilton had suggested, until later to develop such branches. As it turned out, the branches of the First Bank of the United States were not mismanaged as Hamilton feared they might be; it was only under the administration of the Second Bank that the management of the branches gave rise to scandal. The bank was not established without serious opposition. The opposition contended that the incorporation of the proposed bank by the Federal Government was unconstitutional, since no specific provision was made in the Constitution for the chartering of such an institution by Congress. Hamilton in defense of his proposed bank replied to his opponents, the chief of whom was Jefferson, in part as follows:

This general principle is inherent in the very definition of government, and essential to every step of the progress to be made by that of the United States; namely, that every power vested in the Government is, in its nature, sovereign, and includes, by force of the term, a right to employ all the means, requisite and fairly applicable to the attainment of the ends of such powers, which are not precluded by restrictions and exceptions specified in the Constitution, or not immoral, or not contrary to the essential ends of political society.

This argument, which Hamilton used to support the constitutionality of the bank, was later to become very famous as the corner-stone of the doctrine of implied powers as developed by Chief Justice Marshall of the United States Supreme Court, but for the time being the best purpose it served was to gain for the bank the approval of Washington, who was in doubt as to approving the bank bill passed by Congress, the Southern members of Congress having been almost unanimously against the bank. Both Randolph, Washington's Attorney General, and Jefferson, his Secretary of State, had rendered adverse opinions, but the President's support was won by Hamilton's brilliant presentation of the doctrine of implied powers which showed the same straight thinking and common-sense that characterized the Secretary's reports on the bank and the mint.¹

4. THE BANK IN OPERATION

The act of incorporation having been passed by Congress and approved by the President, capital was quickly subscribed, and the central

¹ From Hepburn, *History of Coinage and Currency*, p. 64. By permission of The Macmillan Company, publishers.

bank was opened at Philadelphia in December, 1791, just a year after Hamilton had read his report on the bank to the House of Representatives. Eight branches were opened, one each in Boston, New York, Baltimore, Norfolk, Charleston, Savannah, New Orleans, and Washington. The location of these branches may suggest to the reader that what is now the Middle West, the Northwest, the Southwest and the Far West did not then exist. In the geographic terms of today, the country then consisted of the Northeast and the Southeast.

On the whole, the bank was founded on sound banking principles and wisely administered, and may be said to have been a great success. The sound administration is to be credited in large measure to the sane views of the two great Secretaries of the Treasury, Hamilton and Gallatin, who held office during the greater part of the period during which the bank operated, Hamilton having been Secretary from 1789 to 1795, and Gallatin from 1801 to 1814. It may be added that Hamilton's influence continued to be felt in the management of the bank after he resigned as Secretary of the Treasury in 1795. That the bank would have been equally well managed under the influence of less able men is doubtful, as may be inferred from the unfortunate history of the Second Bank of the United States. This bank was in form and powers essentially a duplicate of the first, only larger. But it lacked a Hamilton and a Gallatin, suffered disaster, and perished.

During its twenty years of life the First Bank of the United States performed valuable services both for the Government and for the public through its stabilizing influence on the banking system as a whole, of which it was the most important single part. Its most important services to the Government consisted in the making of loans and the transfer and safe-keeping of its funds. At this time the revenue of the Government consisted primarily of customs duties collected at the ports up and down the seaboard, at the most important of which the branches of the bank were located. The bank's notes were receivable for government dues, and duties paid in the notes of the bank at any branch might readily be transmitted from that branch to any part of the country the Government directed.

The first of the loans made to the Government was the \$2,000,000 loan to cover the amount of the government's subscription to the bank's stock. Incidentally, this loan represented the outstanding weak feature of the bank's financing; it is not in accord with sound banking practice to have the bank's stockholders borrow from it the amount of their subscriptions. The absurdity of this mode of financing is at once perceived when it is pointed out that, if all the stockholders borrowed the

amount of their subscription from the bank, the bank at the time of organization would have simply traded its stock certificates for its stockholders' promissory notes. It would have no real capital at all except some rather doubtful promissory notes and it would have no cash reserve. This kind of banking has aptly been termed "banking on wind," and the various states have tried to hold it in check by making such operations illegal.

The saving feature for the Bank of the United States was that only the Government's subscription was to be paid by a loan. The other stockholders had to pay in specie and government bonds in four equal installments, as already stated. That three fourths of these subscriptions were in government bonds would have represented another very bad feature except for the fact that the amount of actual cash paid in provided the bank with ample cash reserves for the scope of its operations during the early part of its life. The additional capital subscribed in the form of government bonds improved the market for such bonds and thus improved public credit. After the bank was in operation it advanced further loans to the Government, and eventually the Government became so heavily involved in debt to the bank through inability to collect sufficient revenue that it was found advisable to sell its stock in the bank as a means of liquidating part of these loans. The Government sold its stock at a premium above par of \$671,860, and thus netted a handsome profit on its banking venture in addition to the dividends of more than eight per cent annually it had received on its stock. On the loan from the bank by means of which it had originally bought the stock, it paid only six per cent.

Of greater importance, probably, than the aid rendered to the Government by the bank, in loans and the transfer of funds, was its stabilizing effect on the currency. Its own notes it issued in moderation, and none below the denomination of \$10. On the growing number of banks organized under state charters, which were always tempted to expand credit unduly, it exercised a healthy restraint by forcing upon them the redemption of the notes which they issued. If a state bank refused to redeem its own notes promptly upon presentation, the Bank of the United States refused to accept them in payment across its counter. Such refusal to accept a bank's notes reflected, of course, a lack of confidence in the bank's ability to pay and tended to endanger its solvency. No state bank that valued its reputation for sound banking could afford to have its notes rejected by the big bank, and the state banks accordingly were careful to maintain redemption of their notes. The relatively small circulation of the state banks in 1811, the year the Bank's charter

expired, affords sufficient evidence of the effectiveness of its restraining influence.

5. DESTRUCTION OF THE BANK

Had the bank been permitted to live through a renewal of its charter when the twenty-year term of its charter expired, it would doubtless have continued to function in an efficient manner and to exercise a healthy influence over the banking system of the country. With twenty years of experience back of it, it would probably have remained sound during the War of 1812-15, and would have continued to grow in power, influence, and favor until now, after nearly a century and a half of experience, it might represent an institution seasoned with age and more capable of maintaining sound financial conditions in the country than the powerful Federal Reserve System, which during its short life has made grievous mistakes attributable perhaps to its youth. Unfortunately, however, the bank fell a victim to political assassination.

There are few, if any, more depressing episodes in American history than the political controversies and stupidities leading to the death of the bank. All the pet bugaboos of a people politically immature and economically illiterate were drafted for the attack on the bank by political and business interests intent upon its destruction to serve their own purposes. It was alleged that the bank was controlled by foreigners; that its supporters had been corrupted by the capitalists; that it was unconstitutional; that it trampled upon the rights and liberties of the people. Heaven might have saved a bank charged merely with being controlled by foreigners if they were not capitalists; or by capitalists if they were not foreigners; but Heaven itself could not save a bank charged with the grievous crime of being controlled by foreign capitalists, at a time when both foreigners and capitalists were anathema among the people. The battle for the renewal of the charter, under the circumstances, was lost before it was begun. The bank was doomed to die, and with its death sound banking in the United States came temporarily to an end.

6. THE COST OF A DISORDERED CURRENCY

For the deliberate destruction of the First Bank of the United States the people were to pay dearly, and the first installment of the bill was not long delayed in presentation. The year after the expiration of the bank's charter the second war with Great Britain began. Since no adequate provision had been made for raising funds by taxation, only two methods remained available for financing the war — the method of war loans and the method of government paper money. Fortunately, the

lesser of these two evils was chosen, but the loans had to be made under the most disadvantageous circumstances. With the steady influence of the great bank removed and under the stimulus of the war, the state banks increased rapidly in number, inflated the currency with reckless issue of their notes, made inadequate provision for redemption of these notes, and speedily brought on suspension of specie payment.

In the absence of reliable statistics it has been estimated that in the four years, 1811 to 1815, the number of state banks increased from 88 to 208, their capital stock from less than \$43,000,000 to \$88,000,000, and the circulation of notes from \$23,000,000 to \$110,000,000.¹ These figures, assuming that they are approximately correct, obviously represented a dangerous inflation of the currency — an increase in note issue of almost 400 per cent was out of all proportion to the increase in the physical volume of trade and production.

The rapid increase in the capital of the state banks was facilitated by the fact that this capital was in large measure fictitious, often consisting of nothing but the promissory notes of the stockholders given to the newly organized banks in exchange for their stock. Perhaps the reader should be reminded that when a new bank is soundly organized, the stockholders pay into the treasury of the bank actual cash to at least the amount of the par value of the stock issued. When this is done, the bank's first statement will show cash equal in amount to the par value of its stock. But when stockholders pay by their promissory notes, for the stock subscribed, the bank's statement will show among its assets, not that much cash, but that amount in promissory notes instead of cash value. Paying for the stock with promissory notes instead of with cash was bad enough, but, to make matters worse, some of these get-rich-quick banks issued their notes, not merely as short-term loans to business men, the prompt repayment of which might have provided the cash reserve for note redemption which the stockholders had failed to provide, but issued the notes instead as a means of payment for government bonds, not redeemable for a considerable period of time. A most profitable sort of business, indeed, to issue non-interest-bearing bank notes in exchange for interest-bearing government bonds, but with the drawback that it involved the probability of embarrassing moments in the not distant future when the notes might come home for redemption on demand across a counter behind which no cash existed.

This sort of bad banking, together with the disturbance to production and foreign and domestic trade incident to war, and the special export

¹ From Hepburn, *History of Coinage and Currency*, p. 77. By permission of The Macmillan Company, publishers.

of some \$7,000,000 in specie as a result of the liquidation of the First Bank of the United States with its foreign stockholders, made suspension of specie payment inevitable. Suspension of specie payment by most banks outside of New England came in August, 1814. After suspension came quite naturally depreciation of the bank-note currency, involving great losses to the Government both directly and indirectly. The Government accepted depreciated state bank notes in payment of customs duties, and the direct loss to the Government from the receipt of poor or worthless bank notes during the years 1814 to 1817 is estimated by Dewey to have been in excess of \$5,000,000.¹ The Government sustained a much greater loss on its loans. Here a double loss was incurred; first, there was a loss because the loans could not be floated at par, owing to the unsound financial condition of the country, and, second, payment for the bonds had to be accepted in the form of the depreciated bank notes, some of which were not worth more than sixty-five per cent of the face value in specie. Dewey estimates the loss to the Government from this source at \$46,000,000, the difference between the par value of the bonds issued, \$80,000,000, which later had to be paid with interest in sound money, and the specie value of the money received for the bonds, \$34,000,000. When to these losses are added other less direct losses to the Government arising from price inflation and the interest paid on the inflated public debt, and the enormous losses inflicted upon business by the disordered currency, the enormity of the crime against the public welfare perpetrated by the destroyers of the First Bank of the United States stands out in startling relief. It is probably not necessary to remind the reader that, while the figures quoted may seem comparatively small today, they were large figures at the time for a country with a population of only about 8,000,000 and starved for capital. Comparable figures today would be a hundred times as great.

Even worse demoralization than mere suspension of specie payment by the banks was threatened for a time. Heavily involved in financial difficulties, the Government, as pointed out in an earlier chapter, was gingerly beginning to tread the primrose path of paper-money issues, and was saved from the disastrous results of this folly only by the fortunate early termination of the war.

7. THE SECOND BANK OF THE UNITED STATES ESTABLISHED

Disturbed by the financial demoralization, friends of sound banking, and some of the enemies of the First Bank who had learned their lesson,

¹ Dewey, *Financial History of the United States*, eleventh ed., p. 145. Longmans, Green and Company, 1931.

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began to advocate the establishment of a Second Bank of the United States. After about two years of discussion and debate, the bill providing for the establishment of the Second Bank of the United States was passed by Congress, the Bank being chartered for the twenty-year period of 1816 to 1836.

The details of the charter of the Second Bank of the United States need not here be considered at length. With some minor differences the Second Bank was modeled closely after the First, but on a larger scale. The capital was fixed at \$35,000,000 as against \$10,000,000 for the First Bank. The Government again took one fifth of the stock, and the general public four fifths, of which one fourth was to be paid in specie and the rest in government bonds, the payments to be made, 30 per cent at once, 35 per cent in six months, and the other 35 per cent in one year.

The Second Bank, instead of making a loan to the Government at the time of its establishment, as did the First, paid a bonus of \$1,500,000 for the valuable privileges conferred upon it by its charter, and agreed to serve as custodian of government funds and to transfer them from one part of the country to another without charge.

It was not only permitted to have branches, but was required to establish one branch in every State where two thousand shares or more of stock were held, whenever, upon application of the legislature of such State, Congress by law required it to do so.

As in the case of the First Bank, voting power was not in proportion to the number of shares held, the maximum number of votes that could be cast by one stockholder being fixed at thirty. The Government of the United States, by virtue of its ownership of one fifth of the stock, was to be represented on the board of twenty-five directors by five directors appointed by the President.

No bank notes under the denomination of five dollars could be issued and no branch-bank notes could be issued, but the branches could pay out the notes of the central bank. Suspension of specie payment on notes and deposits was subject to a penalty of twelve per cent per annum. Total debts of the bank, not including deposits, could not exceed \$35,000,000. This provision, it should be observed, limited the note liabilities of the bank, but not the deposit liabilities.

The bank could not hold any real estate except what was requisite for the convenient conduct of its business or parcels acquired in the process of collecting debts due to it, and it was forbidden to deal in anything except exchange and bullion. It was, in short, to be confined by its charter to the conduct of a strictly banking business.

8. THE EARLY MISMANAGEMENT OF THE BANK¹

In the light of the experience of the country with the First Bank, there was nothing in the provisions of the charter of the Second Bank to indicate that it would not at once become a useful institution and be a great aid in restoring financial stability. Unfortunately, however, the bank, instead of proving a great success from the start, was so badly mismanaged for the first few years of its existence as to become a national liability rather than an asset.

In some measure the early mismanagement was forced upon the bank by circumstances over which it had no control. It had no power, for example, to compel the state banks to resume specie payment, and in order to induce them to do so, had to make some concessions weakening its condition, including the making of loans to the amount of \$6,000,000 to individuals or banks in New York, Philadelphia, Baltimore, and Virginia before it could collect the balances due it from the state banks.² But there were more fundamental causes of mismanagement than this.

Politics entered the affairs of the bank at the very beginning of its career when the chief qualifications of the five directors appointed by the President were made to be that they were good Republicans rather than good bankers, and when the first president of the bank elected by the fifteen Republican members of the board was the politician William Jones, with no particular qualifications for this position. The mismanagement of the bank began when it opened its doors, if not before. It failed to insist upon the payment of subscriptions to its stock in specie to the amount of \$7,000,000, as required by the charter, receiving instead less than \$2,000,000. As a substitute for specie it accepted promissory notes and state bank notes, and to that extent depleted its cash reserves. In the face of a weakened cash reserve position, the bank with its branches rapidly expanded its loans and investments, the directors acting upon the assumption that it was their duty to earn large dividends rather than to conduct a sound banking business, thus violating the first principle of good banking.

A worse feature of the bank's policy was the making of loans without adequate security, and even fraudulently, to officers of the bank, particularly to officers of the Baltimore Branch, which seems to have been the center of the fraudulent transactions. As a result of a Congressional

¹ Sections 8-14 of this chapter represent in the main a summary of some parts of Catterall's *The Second Bank of the United States*. By permission of The University of Chicago Press. Some factual material in these sections was drawn also from Dewey's *The Second Bank of the United States* published in volume 26 of the *Report of the National Monetary Commission*.

² Catterall, *The Second Bank of the United States*, p. 25.

investigation, Jones resigned as president, and a capable and honest, if not brilliant, banker, Langdon Cheves, was appointed in his place in 1819. When Cheves took command, the bank was in a desperate condition, not only as the result of the previous fraudulent loans which cost it several millions of dollars, but as the result of a policy of overexpansion, from which the Jones administration had already begun a difficult retreat. Some of the difficulties which the bank encountered under both the Jones and the Cheves administrations may be considered here with profit to illustrate the application of banking principles under given economic and political conditions.

9. DOMESTIC EXCHANGE DIFFICULTIES

One of the greatest difficulties with which the bank had to contend was the so-called "drain of the capital" from the main office of the bank in Philadelphia and the Eastern branches to the branches of the West and South. What was actually "drained" was, of course, the active funds of the bank — its assets — not the capital stock. The process was as follows: Any branch might make loans or discounts in the form of the notes of the central bank, with which the branches were provided by the parent bank. When such loans were made to their customers by the branches in the West and South, the bank notes so issued tended to be used as exchange or remittances made in payment for goods bought in the East, and when the notes arrived in the East the payees receiving them might present them for redemption at the parent bank or the branches in New York or Boston or elsewhere in the East. Such redemption of notes at the Eastern offices of the bank tended to deplete the bank's funds there. But when the loans which had been made by the Western branches matured, they were paid where they had been made, thus building up the funds at the Western branches. If, now, the Eastern offices had at the same time been issuing notes to their own customers to be used for exchange remitted to the West, to approximately the same amount that were issued by the Western branches and used as exchange for remittance to the East, no difficulty would have been encountered. But it happened that the balance of trade was against the West in favor of the East. More loans were made in the West in the form of notes to be sent East, than were made in the East in the form of notes to be sent to the West. The result was a gradual transfer of the actual assets of the bank from the East to the West. The result was the same for the parent bank as would be the result for a foreign exchange banker who persistently bought more commercial drafts on foreign country than the amount of bankers' drafts he sold on that coun-

try. Such a banker would deplete his funds at home and build up large balances abroad.

Another method of draining capital from the East to the West and South was for the Western and Southern branches to draw drafts against the Eastern offices, and sell these to their customers who had payments to make in the East. Unless these branches then at the same time bought drafts payable by business men or banks in the East and sent these to the Eastern offices for collection, this process would drain the funds from the East to the West and South in precisely the same way as the issue of notes just described. In foreign exchange transactions such an excess of payments in one direction tends to lead to offsetting shipment of specie, unless long-term loans are made from the country to which the excess payments are due to the country from which they are due. Similarly, the situation within the United States could have been corrected by the shipment of specie from the West and South to the East, but there was very little if any specie available for shipment from these sections. They were poor in that form of capital as in every other form. They were, in short, afflicted with a chronic desire to buy more than they sold and more than they could pay for.

Many of the loans made by the Western and Southern branches were secured by real estate, and, instead of being paid at maturity, were renewed again and again. Those which were repaid when they matured were paid largely in the form of state bank notes issued by banks which either refused to redeem them in specie or did so only under pressure. Thus, it became very difficult for the parent branch to recall from the West and South the funds which had drifted to those sections.

10. A POLICY OF CONTRACTION BEGUN

Because of these various circumstances, the demand liabilities of the bank by July, 1818, had grown out of all safe proportion to its specie reserve, the former being in excess of \$22,000,000, and the latter only \$2,357,000. Thus, the cash reserve ratio was a trifle more than ten per cent, a ridiculously small reserve for a central bank designed to be the bulwark of the whole banking system. The directors of the parent bank at Philadelphia feared that suspension of specie payment could be avoided only by vigorous action, and in the course of a few months the following measures were taken:

Discounts were curtailed at Philadelphia, Baltimore, Richmond, and Norfolk. The Cincinnati branch was directed to collect balances due from state banks in Cincinnati at the rate of twenty per cent a month; the offices were forbidden to receive any notes issued by other offices

except in payments to the United States; the offices were prohibited from selling drafts at par and restricted in the purchase of domestic bills of exchange. The Southern and Western branches were called upon for \$700,000 in specie, and President Jones was authorized to import an additional \$1,500,000. Finally, the branch offices were forbidden to accept the notes of any state bank which did not redeem its notes in specie on demand.

These various measures were designed not only to diminish or stop the shifting of the funds of the bank to the South and West, but to place the whole institution — parent bank and branches combined — in a stronger position. In some measure these purposes were achieved, but the contraction of credit involved in carrying through these reforms in policy brought down upon the bank the wrath of the people whose speculative enterprises were ruined by the monetary stringency of 1818-19, for which the bank was only partially responsible. The people of the United States have never loved the man or the institution that has *pricked a speculative bubble, leaving nothing but a disillusioning void* where there had existed an entrancing vision of wealth.

11. THE CONSERVATIVE MANAGEMENT OF CHEVES

Since the prime cause of the embarrassment at the main office in Philadelphia was the drain of capital to the West and South through the medium of notes issued and drafts drawn by the Western and Southern branches payable at the Eastern offices, Cheves directed these branches to cease issuing notes, and at the same time he discontinued the purchase at the Eastern offices of drafts drawn by the other branches. These measures were simple but effective. The drain of capital ceased. Additional measures were also taken to collect balances due from the state banks, permission was obtained to pay the sums due to the Government in the same currency in which these sums had been paid into the bank, and \$2,000,000 was borrowed from Europe, payable in three years. And, finally, Cheves suspended dividends on the bank's stock, reserving profits for the restoration of the bank's capital, which had been impaired under the reckless and dishonest management of those previously in control. In short, he completely reversed the old policy of placing dividends before safety, by placing safety before dividends.

Cheves did not rest content with having merely saved the bank from immediate disaster, but planned to maintain it in a safe condition, and some of the measures taken to achieve this end may be briefly noted. Having checked the drain of the capital of the bank to the Western and Southern branches, he resolved, further, to bring back to the East the

excess that had gone to the other sections. The Western and Southern branches were prohibited from issuing notes, except five-dollar notes, when the exchanges ran against them, and this was practically all the time. Since the five-dollar notes could be issued only in small quantities through the physical limitation imposed upon their issue by the requirement that each note be signed by the president and the cashier of the Philadelphia office, the restriction on note issues was very severe. Incidentally, this restriction on note issue was at the same time a restriction on loans, since most loans were made in the form of notes at that time. A second restriction on the branches was that they were not to draw drafts against other branches unless they had provided by proper remittance for meeting the payment of such drafts from their own funds. Some of the excess assets held by the Western and Southern branches were required to be transmitted to the East in the form of specie or drafts on Europe or the North. Arrangements were made with the Government also, to the effect that the Treasury was to draw for funds at any given branch only after having given the bank time for the transfer of these funds from other branches, thus obviating the depletion of funds at some branches resulting from the Government being paid at one branch and withdrawing the funds from another. Such operations of the Government had tended previously to deplete the funds of the Eastern branches.

Cheves's conservative policy, as represented by these and various other measures, not only involved the contraction of loans and discounts by the bank, particularly by the branches of the West and South, but it also compelled the state banks to pursue a more conservative policy than they wished.

12. CHEVES AND THE STATE BANKS

Cheves's policy in respect to the state banks embraced a demand for immediate reduction of their debts to the bank, a settlement of balances in the future at regular intervals, prompt presentation of their notes for redemption in specie whenever any such notes came into possession of any offices of the bank, and refusal to accept at the bank or its branches the notes of any state banks which did not redeem in specie upon demand.

This attitude of Cheves toward the state banks the latter considered high-handed and outrageous. In the West and South there were few banks which redeemed their notes in specie during the years 1819 to 1822, and the notes of most banks failed to circulate at par throughout the country. The discount on the state bank notes varied according to the reputation of the bank and in some cases in proportion to the dis-

tance from home. There was a strong feeling on the part of state banks that their notes should be permitted to remain outstanding indefinitely as a permanent form of currency, not only because thereby they would in effect be enabled to draw interest on capital produced cheaply by their printing presses, but for the good of the country. They complained naïvely that, if their note issues were limited to the quantity which they could redeem upon demand in specie, their business would be practically destroyed and the country would be deprived of a large part of its circulating currency. Consequently, any meddlesome person or bank which insisted upon redemption of bank notes in specie was to be considered a public enemy whose continued existence represented a national misfortune and whose demise might be hailed with satisfaction.

Public sentiment was with the state banks rather than with Cheves. It favored unsound banks and expansion rather than sound banking and contraction and the maintenance of a paper currency convertible upon demand into specie. The mass of our people have tended always to prefer high prices in bad money to low prices in good money because on the whole they have been a group of speculators for the rise, and high and rising prices make debts easy to pay and multiply speculative profits; while low and stationary prices make profits hard to realize except as a result of business efficiency, and falling prices bring ruin to speculators operating for the rise on borrowed money. It is not surprising, therefore, that the State Governments in some cases joined their banks in the struggle against the Monster Bank.

13. THE BANK'S CLASH WITH THE STATE GOVERNMENTS

After a long struggle between the bank and the state banks of Georgia, the Georgia legislature passed a law providing that after January 1, 1822, state bank notes held by the Bank of the United States should not be redeemable in specie unless the person presenting them should swear that the notes were not procured by the bank for the purpose or with any intent to demand or to draw specie from the bank issuing the notes.¹ The bank's reply to this was to bring suit against the Planters' Bank of Georgia. When the case was decided by the Supreme Court of the United States in favor of the bank, the Georgia legislature repealed the law.

In all the Western States "relief laws" were passed in 1819-20, hindering all creditors, including the Bank of the United States, from collecting their debts. During 1817 to 1819 a number of States, including Maryland, North Carolina, Kentucky, and Georgia, levied taxes upon

¹ Catterall, *The Second Bank of the United States*, p. 88.

the branches of the bank located within their borders, and other States considered doing so. Catterall says that it was only the decision of the Supreme Court in the cases of *McCulloch vs. Maryland* and *Osburn vs. the Bank of the United States* which saved the bank. "Had it lost either of these two cases, there can be no doubt that it would soon have been taxed out of existence in all of the Western and Southern States."¹

It was in Ohio that the most dramatic struggle between the bank and the State Government occurred. Here the state auditor Osburn entered the branch bank at Chillicothe and forcibly collected the tax levied by the State in the face of an injunction issued by the Circuit Court of the United States to prevent collection of the tax. When the bank instituted suit against Osburn for contempt of court and trespass, the legislature of Ohio passed an act in January, 1821, withdrawing from the Bank of the United States the protection and aid of the laws of the State in certain cases unless the bank would agree to pay the tax to the State or to withdraw its offices. The bank persisted in its suit and won, in 1824, thus bringing to an end Ohio's bold attempt to nullify the laws of the United States and outlaw its agent, the Bank of the United States.

The bank having won in its struggle for sound banking against the opposition of the state banks and the state legislatures of the Western and Southern States, and the affairs of the bank having been placed in good condition, Cheves, the conservative banker, retired to make way for the brilliant Nicholas Biddle, who became the president of the Second Bank of the United States, at the age of thirty-seven, in January, 1823.

14. THE SECOND BANK AT ITS PRIME

In the period from 1823 to 1828, Biddle developed the Second Bank of the United States into a powerful and useful institution. He collected promptly the balances due to the bank from the state banks, mainly by presenting their notes promptly to them for redemption in specie. At the same time he increased the note issue of the bank by making loans in the form of its own notes instead of paying out state bank notes for this purpose. To the extent that he thus increased the circulation of the notes of the Bank of the United States he provided the country with a uniform currency, and to the extent that the prompt redemption of their notes in specie, which he forced upon the state banks, tended to maintain these notes at their par value, his policy improved the bank-note currency of the country as a whole. Faced with the necessity of prompt redemption, the state banks were restrained from the reckless overissue of their notes, and with the Bank of the United

¹ Catterall, *The Second Bank of the United States*, p. 65.

States itself issuing notes in moderation, the danger of currency inflation was minimized. Biddle further promoted sound banking by refusing to make real estate loans, confining his loan operations primarily to short-term loans to business men for business purposes, and by maintaining a firm administrative control over the branches of the bank. He also sought to improve the exchange situation and to prevent the drain of capital to the West and South by encouraging the branches of the West and South to buy bills of exchange payable, perhaps in sixty or ninety days, at some Eastern point instead of merely making loans on promissory notes payable locally. When such bills were sent East for collection, they could be used by the Eastern offices of the bank as an offset to notes issued at the Western and Southern branches and presented for redemption as a form of exchange at the Eastern offices.

15. DOWNFALL OF THE SECOND BANK

At the end of the period just discussed, it might have seemed that the great success of the Second Bank of the United States in promoting sound banking would have placed it in a very strong position politically and would have made a renewal of its charter certain. Unfortunately, organized opposition to the renewal of the bank's charter developed. Politically the bank was in a weak position. Support for the bank could come mainly only from a small body of people made up of the officers and stockholders of the bank and others directly interested in its welfare and a comparatively small number of other persons who understood and desired the benefits of a sound banking system. That the bank promoted sound banking in providing the country with a safe and uninflated currency did not recommend it to that large portion of the population primarily interested in land and commodity speculation, for whom rising prices at any cost were the supreme desideratum. What the speculators wanted in currency was quantity, not quality.

Working hand in hand with those who were clamoring for more money were the state banks, which stood ready to supply them with unlimited quantities of bank notes, provided only they were freed from the pernicious control exercised over them by the Monster Bank, which insisted that a promise to pay upon demand should be honored, even though printed upon the face of a bank note. The downfall of the bank was made inevitable by some indiscreet political maneuvering of its president Biddle, in connection with the political ambitions of Andrew Jackson's enemy Henry Clay. As a champion of the people, Jackson was naturally disposed to be antagonistic to the bank, anyway, and the fact that anyone connected with the bank was apparently engaged in a political

conspiracy against him strengthened his determination to destroy it. Politically the position of the bank was further weakened by the fact that a charge was brought against it, and in some measure justified, that it had made extortionate charges for exchange, the evil alleged being that when the branches bought bills of exchange as a method of advancing loans, they charged a double discount — one because the bills were payable in the future and a second because the bills were payable at a distance. Other charges made against the bank for political purposes, were that it was unconstitutional and unnecessary, and that it was controlled by foreigners who might use it to the detriment of the United States in case of war. Despite these charges — some of which were, of course, absurd — a bill rechartering the bank was passed by both houses of Congress. This bill Jackson vetoed in July, 1832, and insufficient support in Congress being found to override the veto, the bank was destined to come to an end as a national bank at the expiration of its charter in 1836. Even before that date its usefulness had been destroyed by political opposition and some impairment of its wisdom of administration. Having lost its national charter, the bank secured a charter from the State of Pennsylvania under which it continued to operate on a scale too ambitious for its altered circumstances, and ultimately it ended its once promising career in disaster.

CHAPTER XVI

STATE BANKING BEFORE THE CIVIL WAR

1. THE FUNDAMENTAL CAUSE OF BAD BANKING

IN GENERAL it may be said that state banking in the United States before the Civil War was bad banking. With some notable exceptions it tended toward the issue of bank notes without adequate provision for redemption upon demand in specie; toward the making of inadequately secured loans; toward the making of loans for speculation in land and commodities rather than for legitimate business needs; toward inflation of the currency, suspension of specie payment, depreciation of notes, and financial panics. And this general statement applies, not only to the operations of privately owned state-chartered banks, but also to some of the state-owned and operated banks.

In considerable measure the unsound banking practices of the state banks were held in check during the period from 1791 to 1811 by the First Bank of the United States, and during the period from 1816 to 1836 by the Second Bank, as pointed out in the preceding chapter. The heyday of bad state banking was during the interval between the expiration of the charter of the First Bank and the establishment of the Second Bank, and again, on a vaster scale, during the period from 1837 to the establishment of the National Banking System in 1863.

In some degree the bad banking of this period was the result of poor laws laxly enforced. But the fundamental cause of the bad banking was the preference of the people for poor money, if only there was plenty of it, to good money that was scarce. It was mainly because many people preferred getting rich quickly on rising prices and with little labor to getting rich slowly through industry and thrift that bad banking flourished in most states of the Union, while good banking was hard put to it to remain alive.

2. EVASION OF LEGAL CAPITAL REQUIREMENTS¹

As early as 1792, Massachusetts, where state banking tended to be better regulated than in most other States, enacted a law restricting in the interest of sound finance the operations of state banks. Of chief interest in the present discussion was that provision of the law which

¹ For factual material in sections 2-6 and 13-16 of this chapter the author is indebted primarily to White's *Money and Banking*, published by Ginn and Company, 1896, and to Helderman's *National and State Banks*, published by Houghton Mifflin Company, 1931.

prohibited the outstanding notes and loans from exceeding double the amount of the "capital stock in gold and silver actually deposited in the bank."¹ The phrase quoted implies that the stockholders were to pay for their stock in gold and silver, and were not to issue notes in excess of twice the amount of gold and silver paid in. But in Massachusetts, as in other States where similar restrictions were placed on banks, the law tended to be evaded or ignored. Various methods of evasion might be used, and it was as difficult to enforce good banking laws not desired by the people as it has been in more recent times to enforce an unpopular liquor law. One method of evasion was for the bank to accept payment for its stock in its own notes, which had been issued in exchange for the stockholders' promissory notes payable to the bank. It would, of course, have been simpler and more direct for the stockholders to have given their own promissory notes to the bank directly in exchange for its stock, but the use of the bank's notes in the way indicated presumably met the requirement that the stock be paid for in cash. In either case there was no real cash paid into the bank by the stockholders as a fund from which the notes issued by the bank might be redeemed. Cash might eventually be obtained for this purpose if the borrowers from the bank, having obtained their loan in paper bank notes, were required to pay off their loans at maturity in specie. Certain banks in North Carolina, in 1819, actually required that borrowers take their loans from the banks in bank notes, then circulating at a discount in specie, but pay off the loans when due in specie. With the specie so obtained they bought up their own notes at a discount.²

While this was obviously a profitable method of operating a bank, it was less profitable than the method used by some banks of refusing altogether to redeem their notes, branding as public enemies those who sought to force redemption in specie. In the latter case the bank, having received payment in specie for the loan first made in its own notes, could lend and relend the specie, and thus draw interest on this amount while the notes remained outstanding indefinitely.

A second method of evading requirements that the capital of the bank be actually paid in specie was for the stockholders to borrow the amount of specie required temporarily while the bank was being organized, and then immediately after they had paid it in to the bank to borrow it from the bank on their own promissory notes, to be repaid to the original lenders. In this case, also, the assets of the banks — all the capital it had — would be the more or less doubtful promissory notes of the impetuous stockholders.

¹ White, *Money and Banking*, p. 367.

² *Ibid.*, p. 367.

Depositors of a given bank become creditors of the bank by their own voluntary action. It may be assumed that they will use their judgment in determining whether or not they may safely entrust their funds to any given bank. But note-holders come into possession of the notes of a bank, and thereby become creditors of the bank, through no volition of their own further than that implied by their willingness to accept in payment for labor or commodities the bank notes tendered to them concerning which they may have no particular information and which they cannot well refuse to accept for no better reason than that they fear the notes may not be redeemable.

Before this amendment to the safety-fund system was made, however, the free banking system had come into existence in 1838, and under this system all banks were chartered under a general incorporation law. The banks in the safety-fund system included only the banks with special charters, and since no more special charters were granted, the safety-fund system was destined to die out with the expiration of the charters of the banks which operated under it.

While the safety-fund system appeared to be a failure during its early years, competent students of banking have concluded that it might have proved to be a success if it had been continued under the amended form with the safety-fund reserved for the redemption of notes alone, and with the further amendment that contributions of the member banks should have been in proportion to the amount of notes they issued instead of in proportion to the amount of their capital. The idea that there ought to be some way of guaranteeing payment, not only to note-holders, but to depositors of failed banks, has persisted down to the present time, and has recently found expression in the Banking Act of 1933, which contains provisions for guaranteeing bank deposits on a national scale. While doubtless much can be said in favor of such laws, it should be noted that they do not represent a desirable substitute for sound banking.

5. FREE BANKING IN NEW YORK

Under the free banking system established in New York in 1838, any person or association of persons might set up a bank and issue bank-notes, provided such person or association deposited with the state comptroller bonds of the United States, or of New York State, or of other approved states, or mortgages on real estate, with certain restrictions, for the purpose of securing payment of the notes to note-holders in case of the bank's failure. It should perhaps be pointed out that these securities remained the property of the bank and the income

from them was still paid to the bank. The advantages to the bank in issuing notes under these conditions were as follows: It might invest its capital in income-producing bonds or mortgages, and, upon depositing these with the comptroller, it might issue its own notes and make loans in the form of these notes to approximately the amount of money invested in the securities deposited. Instead of having then invested only its original capital at interest, it had in effect invested twice that sum, and received "double interest." To many persons this privilege of issuing notes thus conferred upon the banks seemed very valuable, and a species of "graft." But it should be borne in mind that under the safety-fund system the banks had been permitted to issue notes without buying any securities at all to be pledged as security for their notes, and might have issued a great many more notes than under the free banking system properly supervised. Further consideration will be given to this point in connection with our discussion of the National Banking System in the next chapter. While there were numerous bank failures in New York under the free banking system from 1838 to 1861, the losses to note-holders were comparatively small, and the New York system turned out to be reasonably sound — one of the soundest systems of banking in the country.¹

6. FREE BANKING IN THE WEST

The free banking system appealed to the democratic instincts of our people — it made banking free to all alike, so that anyone could become a banker almost as easily as a grocer, barber, blacksmith, or farmer; and in fact, in some cases more easily, because, as the law was applied in many states in which it was adopted, banking became a business which could be conducted without capital. The free banking system became particularly popular in the West and South, where the eternal scarcity of money at last seemed to be in process of being ended, with almost anyone able to print his own if he so desired.

The conditions relating to deposits of securities and note circulation varied from State to State. In Illinois, where the free banking system was established in 1851, the bank's capital might consist wholly of bonds of States deposited with the state auditor as security for the circulating notes, and notes might be issued to the amount of eighty per cent of the value of securities deposited.² In Indiana, under the law of 1852, the state auditor might issue notes to the bank to the full amount of the state bonds deposited, but the bank was required to

¹ Helderman, *National and State Banks*, pp. 19-24.

² White, *Money and Banking*, p. 354.

keep in its own vaults specie to the amount of twelve and a half per cent of its circulating notes.¹ In Michigan, where a free banking law was passed as early as 1837, thirty per cent of the bank's capital was required to be paid in specie before the bank could begin business, and the bank was to deposit security with the auditor general for its circulating notes and other liabilities. Here personal bonds as well as state bonds and mortgages were acceptable as security.²

The provisions of the various state laws just quoted would seem to indicate that it was the intention of the lawmakers to maintain some semblance of conservatism in the issue of notes and the requirements of capital and cash reserve. But whatever may have been the intention of the legislators, the history of state banking under the free banking laws indicates that recklessness and disregard of inevitable calamitous consequences were the predominating characteristics of free banking as practiced in the West and South, if not in the East. Those provisions of the state laws which aimed at conservatism were easily circumvented with neither the people at large nor the officers of the law apparently much concerned about their violation.

In regard to those clauses of the state laws requiring a stated minimum cash reserve, these seemed to have caused some of our early bankers with little real capital not much concern. They were richer in psychological resources than in more tangible economic resources. In Michigan the device of the circulating cash reserve was used. When the state bank inspectors made their rounds, presumably not wholly unheralded, the reserves were spirited through the forests from bank to bank and always found waiting for the more slowly moving inspectors when they arrived. Where this convenient revolving fund was lacking, boxes filled with nails or glass with a layer of gold or silver coins on top might be exhibited to impress the inspectors with the adequacy of the cash reserve.³ Naturally, such frauds might have been prevented by zealous state officials intent upon enforcing the letter and the spirit of the law, but the laws themselves were lax enough to permit bad banking without legal evasions. In short, the laws invited inflation; the people desired inflation; the bankers thrived on inflation. So inflation came.

7. INFLATION IN THE EIGHTEEN-THIRTIES

The early eighteen-thirties represented a period of frenzied expansion in the West and South. A number of factors conspired to fire the imagination of the people and to inflame their desire for great wealth

¹ White, *Money and Banking*, p. 357.

² *Ibid*, p. 370.

³ Helderman, *National and State Banks*, pp. 26-28.

attained with rapidity and ease. The improved means of transportation afforded by the Erie Canal, completed in 1825, the Cumberland Road, and the development of steam navigation on the waterways caused a rapid movement of population westward. Beginning with 1830 there came the building of railroads, and by 1835 more than one thousand miles had been built, with prospects good for many more thousands soon to be built. Population in Ohio, Indiana, Illinois, and Michigan increased rapidly. In these Western States the sale of public land increased enormously, the land for the most part being paid for with borrowed money. The borrowers were eager to borrow and buy, expecting to realize great profits in a short time, and the banks were eager to lend, interest rates being high, and the loans being made primarily in the form of bank notes based on comparatively small specie reserves. Speculation thrived also in the South — a great increase in the demand for cotton by England stimulating the production of cotton. With the growing speculation in agricultural land there developed also increased speculation in city real estate, all of which was financed by a great increase in bank notes and bank loans by a rapidly growing number of banks.

Between 1829 and 1837, when the speculative mania came to its natural end in the panic of 1837, the number of state banks had increased from 329 to 788, the capital of these banks had expanded from \$110,000,000 to \$291,000,000, their note issues from \$48,000,000 to \$149,000,000, and their loans from \$127,000,000 to \$525,000,000.

The expansion in the number of banks, and in their loans and note issues was greatly stimulated by the war against the Second Bank of the United States and its ultimate destruction in 1836. One of the weapons employed by Jackson against the bank was the withdrawal from it of the government funds, which were then distributed among a considerable number of state banks, nearly \$50,000,000 having been withdrawn from the Second Bank and deposited with the state banks by 1836, before the Act of Congress of 1836 regulating such deposits became effective. This Act of Congress was meant to give the Federal Government a considerable measure of control over the operations of the depository banks, and under favorable conditions might have exercised a restraining influence in the interest of sound banking. The upper limit on deposits in each bank was to be seventy-five per cent of the paid-up capital; the banks were to be required to report their conditions regularly to the Secretary of the Treasury, to credit all government deposits as specie, and to pay specie on demand for treasury drafts. Deposits were to be discontinued in banks which suspended specie payment or

which issued bank notes under the denomination of five dollars. The banks were to be required, also, to transfer government funds and to perform other banking operations for the Government.

The same act which laid down these requirements for the depository banks also provided for the distribution of the surplus of the Federal Government among the States — a measure that had long been debated. The government surplus had grown in large part from the generous sums received in the sales of public land. Eventually \$28,000,000 of federal funds were distributed under this act. These surplus funds, together with the deposits taken from the Bank of the United States, provided many of the state banks with additional resources from which to make loans to land speculators.

Since the money paid to the Government by the land speculators was now deposited by the Government in the state banks to be lent anew to speculators for the purchase of more land from the Government, it became a sort of revolving fund circulating from the banks to speculators, from speculators to the Government, and from the Government back to the banks. Thus an expansion of one million dollars in bank notes issued by the state banks might become the means of purchase of many millions of dollars' worth of public lands. Similar considerations applied also to speculative loans for other purposes. Under such circumstances inflation of the currency and rising prices of land with increasing speculation went hand in hand. Land itself being the security for the loans, the higher it rose in value, the more loans could be made; and the more loans there were made, the higher would go the price of land; a most delightful circle, with nothing vicious about it except the ultimate and inevitable crash.

8. THE PRELIMINARY PANIC OF 1833-34

While to the optimistic speculators of the time it probably seemed that there need be no limits to the expansibility of note issues and bank loans, and that the price of land might rise indefinitely, the speculative pyramid was bound sooner or later to collapse with disastrous consequences to the builders. A foretaste of the panic of 1837 was had by the country in 1833-34 when the Bank of the United States — itself overexpanded — was forced to contract credit upon the withdrawal from it of the government deposits. The contraction by the big bank resulted not only in a reduction of its loans and note circulation, but also in a drain of specie from circulation. The severity of this crisis, which receives little attention because it was not a major crisis, is indicated by the following quotation from Catterall:

The failures beginning in this month (January, 1834) continued uninterruptedly until June. Wages went down; notes of specie-paying state banks were depreciated at from $1\frac{1}{2}$ per cent. on New England notes to 12 per cent. on Alabama notes; prices fell; money could be borrowed only at from 12 to 18 per cent. per annum; state loans could not be raised; workmen were discharged in large numbers; real estate declined in value. In April money was so scarce that due bills had to be given in payment by many persons, while loans were made at a rate of 5 per cent. a month.¹

From this short and sharp depression the country recovered soon after the bank discontinued its policy of contraction, and the next year saw a considerable increase in the number of state banks and in the amount of their capital, circulating notes and loans.

9. THE PANIC OF 1837

When, after the brief interruption by the panic of 1833-34, land speculation surged forward once more, it was Jackson who stopped it again, and this time with premeditation, and not as a chance by-product of his fight with the bank. As early as April, 1835, all collecting and receiving officers of the Government had been instructed not to receive any bank notes in denominations of less than five dollars, and a year later it was ordered that the United States Government should not pay out any bank notes of any denomination unless the same were payable on demand in gold or silver coin at the place of issue, and unless they were convertible into gold or silver on the spot at the will of the holder.²

These measures of the President were obviously for the purpose of restricting the issue of bank notes, particularly those of the smaller denominations, and for the purpose of encouraging a larger circulation of specie, and finally for the purpose of bringing pressure to bear upon the banks to maintain the convertibility of their notes. Following these measures, which were on the whole sound, came the better known "specie circular," of July, 1836, which ordered that agents for the sale of public land should take payment only in specie and should no longer receive the notes issued by banks.

The refusal of the Government to accept bank notes in payment for land naturally checked the purchase of government land and speculation in real estate generally. With demand declining, prices fell. At the same time other complicating factors contributed to demoralize financial affairs. The distribution of the federal surplus among the States meant the transfer of these funds from one set of depository banks to another,

¹ Catterall, *The Second Bank of the United States*, p. 327.

² Dewey, *Financial History of the United States*, p. 228. Longmans, Green and Co., 1931.

and the first installment of this distribution was made on January 1, 1837. The transfer of this sum, \$9,000,000, from one set of banks to another, and from one part of the country to another, caused a temporary stringency in the regions losing their government deposits. Shortly after, when the second installment was called, the suspension of banks began, and soon became general. While there were other contributory factors, such as the failure of important banks and other concerns in England, and crop failures in the United States in 1835 and 1837, the fundamental cause of the panic of 1837, and the resulting years of depression, was the unsound expansion of banks supplied with inadequate cash reserves.

Suspension of specie payment was accompanied by depreciation of the state bank notes, the depreciation ranging from a very small amount on the notes of the better banks to one hundred per cent on the notes of banks which failed disastrously. A temporary resumption of specie payment by the banks in 1838 and 1839 was followed by a more prolonged suspension lasting until 1842.

10. THE INDEPENDENT TREASURY SYSTEM

With governments as with individuals, one bad step is likely to lead to another, and so it was now with the Government of the United States. Having destroyed a sound fiscal agent — the Second Bank of the United States — and having deposited its funds in the unsound state banks, many of which failed shortly thereafter, the Government resolved to have no more to do with such banks, and so began the agitation for the establishment of the Independent Treasury System. This was to be an institution, not a part of the private banking system of the country, in which the surplus funds of the Government would be locked up securely and be available at any time for government needs.

The Independent Treasury System was first established by a law passed in 1840 by the Democrats. But when the Whigs came into power in 1841, they repealed this law and attempted to establish once more a national bank. The act to establish a new bank was, however, vetoed by President Tyler, and the Democrats, having returned to power, the Independent Treasury System was re-established in 1846.

Under this system federal revenues were deposited in the Treasury at Washington or at various sub-treasuries in other cities. The chief advantage of this method of handling the public funds was that of safety. With the public money locked up in the Treasury and consisting of nothing except gold and silver and treasury notes, the Government could lose nothing directly through the collapse of the banking system of

the country. That this was an advantage of considerable importance was demonstrated in the panic of 1857 when the Federal Government escaped embarrassment in meeting its financial obligations, while the State Governments, with their funds deposited in banks, were unable to pay their bills except in depreciated bank notes or by bringing ruinous pressure to bear upon banks in distress by demanding from them specie.

On the basis of the assumption that inflation of bank credit is always an evil, an additional advantage can be claimed for the Independent Treasury System. The segregation of considerable quantities of gold and silver in the Government Treasury deprived the state banks of just so much cash reserve to be used as a basis of inflation of bank notes and deposits. Moreover, this restriction on expansion of bank credit tended to cause a lower price-level to prevail in the United States than would otherwise have prevailed and tended thus to encourage exports and discourage imports, so that gold and silver tended to remain in the country or to be imported in larger quantities than otherwise would have been the case. As a consequence the total stock of specie in the country tended to be larger and the amount of bank credit tended to be less than if the Independent Treasury System had not been in operation. In a country which had tended always to overextension of bank credit relative to the amount of specie within its borders, this may well have been held to be a desirable result, although presumably exceedingly irksome to inflationists.

However great these advantages of the Independent Treasury System may have been, there were some decided disadvantages which more than offset them if it may be presumed that there were other ways of preventing reckless expansion of bank credit than by locking up a substantial proportion of the cash of the country in the Federal Treasury. The outstanding disadvantage of the Independent Treasury System lay in this: It tended always to be either draining the specie of the country from the channels of trade and thus producing a monetary stringency or to be discharging into the channels of trade specie not required at the time and producing thus a trouble-making redundancy, according to whether government receipts were greater or less at any given time than government disbursements. A redundancy of funds thus forced into circulation quite by accident might stimulate reckless expansion of bank credit, while a stringency produced a little later might cause contraction of bank credit and a financial crisis. Obviously, this Independent Treasury System was a clumsy device at best and capable of doing a great deal of harm to the banking system because government

receipts and disbursements are rarely equal either during the period of a whole year or during any part of a given year. So long as it was in operation, the amount of money in circulation and the amount of cash reserves of the bank were subject to constant fluctuations having no relation whatever to the requirements of industry and trade.

II. BANKING DEVELOPMENT, 1846-60

There is some evidence that the actual effects of the Independent Treasury System upon the banking system of the country during the period from 1846 to 1860 were both good and bad. Banking, it seems, became more conservative after 1846 than it had been during the thirties and the early forties, and expansion of the number of banks and of bank loans, deposits, and notes proceeded at a more moderate pace, considering the general expansion in trade and industry of the country, and it did not outrun the increase in specie reserves. This is clearly shown in the following table:

TABLE IV. BANKING DEVELOPMENT, 1846-60¹

	Average, 1846-48	Average, 1858-60	Increase in per cent
Number of banks.....	724	1487	105
Capital, millions of dollars.....	202	406	101
Loans, millions of dollars.....	322	644	100
Deposits, millions of dollars.....	97	233	140
Circulation, millions of dollars...	113	185	64
Specie, millions of dollars.....	41	88	115
Ratio of specie to deposits and notes combined.....	19.5%	21.1%	1.6

¹ The figures in the table are adapted from Dewey, *Financial History of the United States*, p. 260. By permission of Longmans, Green and Company, publishers.

The foregoing table draws comparisons between two three-year periods, twelve years apart. During these twelve years the number of banks increased 105 per cent, bank capital increased 101 per cent, loans, 100 per cent, deposits, 140 per cent, circulation or note issues, 64 per cent, and specie held by the banks 115 per cent. Broadly speaking, this shows a doubling of bank resources and operations during a period of twelve years, or a rate of increase approximating 6 per cent a year, compounded annually. For a young country rapidly increasing in population and wealth, this rate of increase in banking operations is perhaps conservative enough. A healthy sign is the increase in the ratio of cash reserve to note and deposit liabilities combined, from 19.5 per cent in the earlier period to 21.1 per cent in the later period. An interesting development is the growing relative importance of deposits

and the diminishing relative importance of note issues. Cheek payments were tending to displace in part the use of notes. Deposits alone increased more rapidly than the amount of specie reserve, but the combined increase of notes and deposits was only 99 per cent, as against an increase in specie held of 115 per cent.

This rather moderate rate of expansion in the banking system seems to indicate that the Independent Treasury System had been acting during this period as a restraining and stabilizing influence. But while the Independent Treasury System might thus check expansion and made for soundness in the banking system as a whole, it could not exercise the same healthy influence upon all parts of the banking system, and one would make a mistake in concluding from the figures just given that banking during this period had been placed on a sound basis. Banking was sound in spots, but there was so much banking on wind, and such lack of effective regulation by the States that the banking system of the country in this period preceeding the Civil War may more properly be characterized as demoralized than as sound.

12. BANK-NOTE DETECTORS

In many States bank notes were being issued in large amounts and inadequately protected by cash reserves or other security. Such notes were not redeemable in cash upon demand, and anyone who insisted upon redemption was branded by bank officials, and to some extent at least by the general public, as a trouble-maker who was bent upon ruining the banks and depressing business. As a consequence of these loose banking methods, many bank notes depreciated in value, the rate of depreciation bearing some rough proportion to the probability of their redemption in specie at some future time. The rate of depreciation varied also with the distance of the bank note from the issuing bank. Since the notes of some banks were depreciated to a much greater extent than the notes of others, and the amount of depreciation of any particular issue varied with time and place, a serious and unnecessary element of uncertainty was introduced into business operations. To add to the confusion there were great numbers of counterfeit notes in circulation, so that a business man who desired to protect himself as far as possible from losses involved in accepting bank notes for more than their actual value had to resort to the use of a *Bank-Note Detector*, a weekly publication striving to give its readers up-to-date information upon current rates of depreciation of hundreds of brands of bank notes as well as upon note issues of new banks just starting in on the profitable business of printing paper money. The following table quoted from a

detector by Hepburn¹ indicates the nature of this monetary problem of the business man before the establishment of the National Banking System in 1863.

BANK-NOTE DETECTOR STATISTICS

	1856	1862
Number of banks reported.....	1409	1500
Number of banks whose notes were not counterfeited...	463	253
Number of kinds of imitations.....	1462	1861
Number of kinds of alterations ..	1119	3039
Number of kinds of spurious notes..	224	1685

This disgraceful state of affairs was no more than the natural consequence of the chaotic condition of the banking laws at the time with note-issuing banks chartered by 29 States under more than 29 different systems. Such a heterogeneous assortment of bank notes legitimately issued by some 1500 banks, with no attempt at uniformity in design and method of printing, represented nothing less than a cordial invitation to the counterfeiter to enter the game and participate in the spoils of the note-issuing racket. With such utter lack of systematic government control, and such a tolerant public attitude toward bad banking and irredeemable bank notes, the thing to be wondered at is, not the demoralized condition of the banking system as a whole during the period from 1836 to 1863, but rather the considerable number of good banks in the country conducting banking operations at this time in conformity with sound banking principles.

13. THE SUFFOLK SYSTEM

Among the good banks of the period there were some privately owned and operated, and some owned and operated by the State Governments. The most interesting sound spot in the generally unsound system of privately owned banks was the so-called Suffolk System in New England, named after the Suffolk Bank in Boston, which established the system in 1818. At that time note issue was a relatively important function of most commercial banks, and the earnings of a bank were closely related to the quantity of its notes that remained in circulation — notes in circulation representing, in effect, as previously explained, loans at the current rate of interest so long as they remained outstanding. It was for the purpose of protecting its own earnings presumably rather than primarily for the purpose of establishing a sound banking system in New England that the Suffolk Bank adopted the plan to be described here:

¹ From Hepburn, *History of Coinage and Currency*, p. 160. By permission of The Macmillan Company, publishers.

In 1818 the notes of the country banks of New England — that is, the banks outside of Boston — constituted a substantial proportion of the money in circulation, and these notes, when they drifted into Boston in the course of trade, were accepted by the Boston banks only at a discount because of the expense of redemption at the distant point of issue. But the notes of the Boston banks themselves, when presented at the counter of the Boston banks, were redeemable at par. Under these conditions Gresham's Law operated to the disadvantage of the Boston banks. Merchants and others who received in the course of trade both kinds of bank notes presented for redemption the good notes, which thus went out of circulation, while they passed on from hand to hand the poor notes which would be redeemed only at a discount. The poor money tended to drive the good money out of circulation. The note circulation, and consequently the profits, of the country banks expanded at the expense of the more soundly operated banks in Boston.

The Suffolk Bank, as a means of removing this threat against its own profitable operation, hit upon the expedient of compelling the country banks to redeem their notes promptly at par, not at the point of issue, but in Boston. The method employed was as follows:

The Suffolk Bank offered to redeem the notes of country banks at par at its own counter, provided the issuing banks would keep with it sufficient funds for this purpose and in addition a permanent cash deposit to compensate it for its trouble. The country banks were not disposed to accept this offer, since to do so would have seemed to provide the enemy with weapons to be used for their own destruction. But the Suffolk Bank induced the other Boston banks to co-operate with it and was able to put its plan into operation by bringing both pressure and persuasion to bear upon the country banks. To the country bank which would maintain the required cash deposit was offered the advantage of having its own notes accepted at par by Boston banks, which made it easier to issue them in loans to its own customers, and the further advantage of having any notes of other country banks which fell into its hands likewise redeemed at par, provided the other banks were members of the Suffolk System. If, however, the country bank refused to join the system and to maintain the required deposit, its own notes were not received at par by the Boston banks, but accepted only at a discount, and then promptly sent home for redemption at the issuing bank's own counter. The notes might also be collected systematically and sent home in amounts so large that the demand for redemption would threaten the solvency of the banks. Thus the Suffolk Bank was able not only to offer the country banks advantages if they joined the system,

but to threaten them with embarrassment or ruin if they did not. As a result of this pressure and persuasion most of the country banks of New England joined the system and New England notes became generally redeemable at par. The Suffolk System remained in operation until the establishment of the National Banking System in 1863, under which each national bank was compelled to receive the notes of other national banks at par, thus bringing an end to the need of the Suffolk System. It may be observed that the Suffolk Bank served a purpose in New England similar to the purpose which the First and Second Banks of the United States tended to serve for the country as a whole, so far as maintenance of specie redemption of state bank notes is concerned. The banks of the Suffolk System did not escape suspension of specie payment in the panic of 1837, but under the leadership of the Suffolk Bank the New England banks remained sounder during a period of generally unsound banking than the banks in other parts of the country.

14. THE LOUISIANA SYSTEM

Another sound spot in our banking system in the period under discussion was the banking system of Louisiana, established by law in 1842. The law required all banks in the State to hold a specie reserve of one third of their liabilities to the public, and to keep the other two thirds of their liabilities covered by commercial paper with a maturity of not exceeding ninety days. Prompt redemption of notes was secured by a provision prohibiting any banks from paying out the notes of other banks. Notes of other banks held by any given bank thus became dead capital, and tended as a consequence to be presented promptly for redemption at the bank of issue. Under these conditions it became very dangerous for a bank to overexpand its loans in the form of bank notes.

To cap this admirable system and actually make it operate with safety, effective state supervision was provided and bank directors were made individually liable for losses resulting from loans and investments made in violation of the law. This excellent state supervised system passed through the panic of 1857 without suspension of specie payment and remained in operation until disrupted by the Civil War.

It should be emphasized that the Louisiana requirement of maintaining a substantial cash reserve as well as the requirement of keeping the bank's other assets liquid served a double purpose. These requirements tended not only to provide the banks with cash or other liquid assets with which to meet demands for immediate cash payment of notes and deposits, but they served also as a drag on the making of unwise loans in immoderate amounts, and thus prevented the very

expansion which is the most common cause of inability to meet demands for cash. There is a strong tendency for writers to assume or imply that the first of these two purposes is the most important one served by cash reserve requirements, when in truth it is the second which is the most important. Cash reserve and liquid asset requirements are much more efficacious in preventing dangerous inflation than in preventing suspension of specie payment when once inflation has occurred and a speculative bubble is pricked and collapses.

15. A SOUND STATE-OWNED AND OPERATED BANK

The two examples just given of sound banking under state laws during a period of general unsoundness in banking institutions in the United States both represent systems of privately owned and operated banks. In the Suffolk System the control in the interest of sound banking was exercised by the Suffolk Bank and its associated banks, the Massachusetts state laws being in themselves ineffective in providing the State with a sound bank-note currency uniformly redeemable in gold at par. In the Louisiana System, the state laws were so wisely drawn and so well administered that the state-regulated banks were perforce soundly managed and their notes redeemable in specie. We have now to consider a state-owned and operated bank — the Bank of Indiana — which was a credit to the Government of the State in which it carried on.

This bank was established by the State of Indiana in 1834 with a capital of \$1,600,000, one half owned by the State and the other half by private individuals. But all except \$300,000 of the privately subscribed capital was lent to the stockholders by the State, so that the State actually advanced most of the bank's capital. The bank was chartered for twenty-five years and was given a monopoly of banking under state laws. It was made to consist of a parent bank, or central office, at Indianapolis, and ten branches scattered through the State. The central office was nothing more than the headquarters of the branches where their operations were guided and controlled by the president and the board of directors. All the capital of the bank was allocated to the branches, each branch being given \$160,000. Each branch was entitled to all its own earnings, but all the branches were collectively liable for their liabilities, a provision which would have been dangerous in the absence of strict supervision and sound management.

The note issues of the branches were limited to twice the amount of their capital, and were thus restrained from inordinate expansion. The bank turned out to be an eminently sound and useful institution, this fortunate result having been the outcome of a well-devised charter plus

careful management and supervision. Unsound practices were forbidden by the charter or avoided by the management. No loans could be made with the stock of the bank itself as security. No favoritism could be shown to directors or other officials in making loans. A majority of the board of directors had to pass upon all loans in excess of \$500, and directors were made liable for losses resulting from loans unlawfully made. These prohibitions and requirements alone tended to make for sound banking, but in themselves alone could not guarantee it. The bank had the power to make mortgage loans, but used this power sparingly in recognition of the sound principle that mortgage loans in large amounts are not proper assets of a commercial bank. Careful supervision of the branches included periodical but unannounced examinations by officials from the parent office — these examinations being “always of the most searching and thorough character.”¹

The Bank of Indiana not only conducted a safe and sound banking business, but made large profits for its stockholders, including the State. Some years before its charter expired, its monopoly privilege was taken away from it, but the bank continued to prosper even when running in competition with certain “wild-cat” banks organized under the free banking laws of the State during the eighteen-fifties. When its charter expired, it was reorganized under a new charter and continued to operate and prosper until its note-issue power was destroyed by the federal law of 1865 levying a ten per cent tax on the issue of state bank, notes.

16. ANTI-BANK SENTIMENT²

During the period covered by this chapter the people of the United States might have been classified, in respect to their opinion on banking, as follows:

1. Those who believed in sound banking.
2. Those who believed in unsound banking.
3. Those who were opposed to all banks.

To the third class belonged Andrew Jackson, who is reputed to have said to Nicholas Biddle: “I do not dislike your bank any more than all banks. But ever since I read the history of the South Sea Bubble, I have been afraid of banks.” Another noted opponent of banks and bank money was Thomas Hart Benton, who became known as “Old Bullion” as a result of his advocacy of hard money. Anti-bank sentiment became of political importance in the Mississippi Valley during the

¹ White, *Money and Banking*, p. 383. The quotation is from Hugh McCulloch.

² Helderman, *National and State Banks*, chapter 5.

eighteen-forties, largely as a result of the disasters growing out of the panic of 1837. Having seen and heard of so much bad banking, the anti-bank party refused to believe in the possibility of good banking. Anti-bank sentiment was strong in Wisconsin, Iowa, Missouri, Louisiana, and some other States, including even Michigan after its wild-cat bank orgy. Those who favored the development of a sound banking system had to meet the opposition, not only of the unsound banking advocates, but also that of the anti-bank party, who considered all bank money a swindle, and not without reason at the time.

CHAPTER XVII

THE NATIONAL BANKING SYSTEM

1. BENEFITS EXPECTED FROM THE NATIONAL BANKING SYSTEM

THE National Banking System was established during the Civil War by an Act of Congress passed in February, 1863, entitled "An Act to provide a National Currency, secured by a pledge of United States stocks, and to provide for the circulation and redemption thereof." Briefly described, this act provided for a system of commercial banks chartered by the National Government and having the power to issue bank notes secured by the pledge of United States government bonds. The most important purpose of the new banking system was to provide the country with a safe and uniform currency — bank notes whose value would be unquestioned and which could be used by business men and travelers from one end of the country to the other. The country had always felt the need for such a paper currency, and in large measure the First and Second Banks of the United States with their branches had supplied it. But with the passing of the Second Bank of the United States in 1836, the paper currency situation had become intolerable.

At the outbreak of the Civil War, the bank-note currency consisted of "the ragged and doubtful issues of sixteen hundred corporations" chartered under diverse laws of thirty-four States. There was no pretense of uniformity in the type of notes issued, and the largest issues were put out by the weakest banks. As Secretary Chase phrased it, circulation was commonly in inverse ratio to solvency. The thousands of varieties of bank notes — some good, some poor, some genuine, some counterfeit, some representing the promises of existing banks to pay, and some the promises of banks that were broken — were a constant annoyance to travelers and a drag on business. Not even expert bankers and professional engravers of bank notes could invariably detect counterfeit, altered, or spurious notes, and the average citizen could not protect himself against fraud and loss even though armed with the latest weekly issue of the *Bank-Note Detector*. European travelers in the United States expressed wonder that a reputedly civilized nation would tolerate such a disgraceful state of affairs.¹

Although many persons had long been suggesting a national system

¹ For a description of the bank note currency of the time see Davis, *Origin of the National Banking System*, pp. 7-26. (*Report of the National Monetary Commission*, vol. 35.)

of bank notes, nothing definite came of these suggestions until the suspension of specie payment in 1861 left the country with no money in circulation except the intolerably bad state bank notes and the small issue of United States "demand notes" that preceded the larger issues of greenbacks described in an earlier chapter. It was during the interval between the issue of the "demand notes" and the first issue of greenbacks that Secretary of the Treasury Chase first proposed the establishment of a National Banking System with note issues so regulated by the Federal Government as to provide a safe and uniform currency. Before the new banking system came into operation, the issue of greenbacks supplied the need of a uniform currency, and bad as the expedient of government legal-tender paper money was, the United States notes were widely welcomed as a much-needed relief from the nightmare currency of the "wild-cat" and "red-dog" banks. But the greenbacks were considered to represent merely a temporary form of currency, soon to be retired, and the National Banking Act was believed to hold forth the promise of a more permanent currency reform. The purposes, provisions, and results of this act will now be considered in more detail.

It has already been stated that the chief benefit to be expected from the National Banking System was a safe and uniform bank-note currency. But Secretary Chase, in urging enactment of the new banking law, pointed to other benefits which it might confer upon the country. It would provide a market directly for a large block of government bonds, and would permanently improve national credit as a consequence of the permanent demand for government securities created by the note-issuing provisions of the law. It would create a large number of institutions under national control widely distributed over the country which could serve as depositories for government funds, receive subscriptions to loans and distribute bonds to subscribers, and otherwise act as fiscal agents for the Government. Finally, it would stimulate the patriotism of the people as a consequence of their direct interest in the government securities brought about by the popular distribution of the loans.¹

Obviously, the last-named of these anticipated benefits was of special importance during the war emergency when patriotism required some measure of artificial stimulation pecuniary in nature. During the war emergency, too, the Government felt more keenly than in time of peace the need of fiscal agents such as would be represented by the national

¹ Davis, *Origin of the National Banking System*, p. 106. (*Report of the National Monetary Commission*, vol. 35.)

banks, and it felt more keenly also the need for an artificially stimulated demand for its bonds. But the need for a safe and uniform bank-note currency had been felt long before the war broke out, and would continue to be felt after the war. A banking system that could provide such a currency would confer, not merely a temporary, but a permanent, benefit upon the country, and there is reason to believe that it was this particular benefit that Chase had most clearly in mind when he advocated the establishment of the National Banking System, even though he emphasized in his speeches and papers certain other benefits to be gained in order to obtain support for his measure in Congress.

2. CHIEF PROVISIONS OF THE NATIONAL BANKING ACT OF 1864

The National Banking Act, which was passed in February, 1863, was amended in various respects in June, 1864, and since the act as thus amended remained in force much longer than the original act, it will best serve our purpose to devote our space to a description of the provisions of the amended act. The following were the more significant provisions of this act:

The act provided for a separate Bureau in the Treasury Department, the chief of which was to be known as the Comptroller of the Currency, and was to have general supervision over the National Banking System. Any number of persons, not less than five, might organize a banking corporation under the act and engage in banking operations, provided that they met the conditions imposed by the law.

The minimum capital of a national bank was fixed at \$50,000 in cities whose population did not exceed 6000; at \$100,000 in cities whose population exceeded 6000, but not 50,000; and \$200,000 in cities with a population in excess of 50,000. At least fifty per cent of the capital was to be paid in before the bank would be authorized to commence business, and not less than ten per cent additional per month from the time of beginning business until the full sum had been paid in.

Before beginning operations every national bank (referred to in the act as an association) was required to deliver to the Treasurer of the United States registered government bonds to an amount not less than \$30,000, nor less than one third of the capital stock paid in. Upon the transfer of these bonds as required, the bank was entitled to receive from the Comptroller of the Currency bank notes of various denominations equal in amount to ninety per cent of the current market value of the United States bonds so delivered, but not exceeding ninety per cent of the par value thereof. At no time might the amount of such bank notes exceed the amount of the capital stock actually paid in. The total

amount of notes to be issued by all the national banks combined was limited to \$300,000,000.

The notes were not only to be engraved in such manner as to guard effectively against successful counterfeiting, but were to have printed on their face such information concerning their nature as to inspire confidence in their prospective holders. Specifically there was to appear the statement, attested by the signatures of the Treasurer of the United States and the Register, that the notes were secured by United States bonds deposited with the Treasurer, and by the promise of the bank receiving the notes and placing them in circulation to pay the same on demand, this promise to be signed and countersigned by the president or vice-president of the bank and the cashier. Thus each note was to be signed and countersigned, not only by treasury officials, but by officials of the issuing bank. To increase further the general acceptability of the notes they were made receivable for all payments due to the United States Government except duties on imports, and each national bank was required to accept the notes of every other national bank in payments due to itself. They were not, however, given full legal-tender power, and could not be used to pay interest on the national debt or to redeem the greenbacks.

When the Comptroller of the Currency should receive satisfactory evidence that a national bank had refused redemption of its circulating notes, he should declare the bonds pledged by such banks to be forfeited to the United States. Thereafter holders of such notes might present them for redemption directly to the Treasurer of the United States, who would then cancel an amount of bonds pledged by the bank equal at current market prices, not exceeding par, to the notes paid.

The issue of national bank notes was further restricted and safeguarded by the cash reserve provisions of the National Banking Act. These provisions in the act as amended in 1864 were as follows:

All national banks were required to maintain specified minimum cash reserves against both notes and deposits, the minimum cash reserve ratio varying in accordance with the location of the banks. National banks located in New York City were required to keep in their own vaults a minimum cash reserve of twenty-five per cent against both notes and deposits. National banks in sixteen other enumerated cities were required to keep cash reserves of twenty-five per cent against both notes and deposits, but were permitted to deposit half of these reserves with national banks in New York City. The sixteen enumerated cities were St. Louis, Louisville, Chicago, Detroit, Milwaukee, New Orleans, Cincinnati, Cleveland, Pittsburgh, Baltimore, Philadelphia, Boston, Al-

bany, Leavenworth, San Francisco, and Washington. By later amendments to the law, Chicago and St. Louis were placed in the same class with New York City, and these three cities came to be known as "central reserve cities."¹ The remaining cities of the specified list became known as "reserve cities," and the number of these cities was subsequently increased to more than sixty, the list comprising most of the more important commercial and manufacturing centers of the country. Banks located in the central reserve cities came to be known as "central reserve city banks"; those located in reserve cities came to be known as "reserve city banks," and all other national banks came to be called "country banks." But these terms were not used either in the original Act of 1863 or in the amended Act of 1864, here under discussion. Country banks — that is, national banks not located in any of the enumerated cities — were required to maintain minimum cash reserves of fifteen per cent against both notes and deposits, of which two fifths had to be kept in their own vaults, while three fifths might be deposited with national banks in any of the reserve or central reserve cities.

The banks were to be held strictly to account in the matter of the minimum cash reserve and the prompt redemption of notes required by the law. Failure to maintain the minimum reserves or to make prompt redemption of notes was to be penalized by the appointment of a receiver by the Comptroller of the Currency and the winding-up of the affairs of the delinquent bank.

The cash reserve requirements in respect to deposits remained unchanged from 1864 to 1913, when they were superseded by the cash reserve provisions of the Federal Reserve Act. But after 1874 national banks were no longer required to maintain cash reserves against their circulating notes either in their own vaults or on deposits with other banks. Instead, each bank was required to keep on deposit in the Treasury of the United States a special redemption fund amounting to five per cent of its outstanding notes, out of which the Treasurer might make redemption of its circulating notes upon demand when presented in sums of \$1000 or multiples thereof. Thereafter, redemption of notes was required only at the bank's own counter and at the Treasury. Before this change in reserve requirements each country bank had been required to name one reserve city or central reserve city bank, and each reserve city bank had been required to name a central reserve city bank, where its notes would be redeemed upon demand. It was at least partly for this reason that the country banks and the reserve city banks were given the privilege of keeping part of their cash reserves on deposit with other banks, but this privilege was not taken away when the cash reserve re-

¹ At the present time St. Louis is classified as a "reserve," not as a "central reserve" city.

quirements against notes were abolished and the method of note redemption was changed.

3. RESULTS OF CURRENCY PROVISIONS OF THE NATIONAL BANKING ACT

It has already been indicated that the main purpose of the National Banking Act was to provide the country with a safe and uniform currency. This purpose was ultimately achieved, but not completely for several years. The provisions of the law were from the beginning quite adequate to guarantee the holders of national bank notes against loss except in the event of the financial insolvency of the Federal Government itself. The pledge of government bonds, with a market value and a par value in excess of the amount of outstanding notes in the case of each bank, in addition to the cash reserves originally required against notes, and the five per cent redemption fund later required, made the notes at least as sound as government bonds. So long, however, as the Government was not in a position to redeem the greenbacks in gold upon demand, the national bank notes were no better than the greenbacks in which they were redeemable by the banks and the Government. Hence, they were not so good as gold until the date of resumption of specie payment in 1879. But neither during the greenback period up to 1879 nor since has anyone lost a dollar through the failure of a national bank to redeem its circulating notes. In all cases in which the banks themselves have been unable to redeem their own notes, the Government has been able to take care of their redemption.

The national bank notes, therefore, proved to be a safe form of currency. The notes also represented a uniform currency in so far as these notes were all alike and equally good. But their issue did not give the country a uniform currency at once, for the reason that many of the state bank notes in their astounding variety of form and value remained outstanding until they were, in effect, abolished by the Act of March 3, 1865, which levied a tax of ten per cent on the notes of any state bank paid out after July, 1866. After this law went into effect, there was nothing for the state banks to do except either to give up issuing notes or to join the National Banking System, which they were privileged to do upon condition of meeting the capital, cash reserve, and other requirements. Some of them did the one and some did the other.

After the abolition of state bank notes by the prohibitive tax that went into effect in 1866, the bank-note currency remained uniform in character until the issue of federal reserve notes and federal reserve bank notes began under the Federal Reserve Act of 1913, except for the tem-

porary issue of emergency currency in 1914 under the provisions of the Aldrich-Vreeland Act of 1907. Since 1914, when the Federal Reserve System was placed in operation, we have had three kinds of bank-note currency—national bank notes, federal reserve notes, and federal reserve bank notes.¹ As to whether this situation represents an improvement over the uniform currency of national bank notes standing alone, we shall have more to say in later chapters.

4. THE NATIONAL BANKS AND THE MARKET FOR BONDS

While the National Banking System did ultimately provide the country with a safe and uniform bank-note currency, it was less successful in the matter of providing a market for United States bonds. The organization of national banks proceeded so slowly that the bonds purchased as a means of securing the note-issue privilege amounted during the war period to only about \$100,000,000, whereas the net amount of the national debt reached a maximum of \$2,758,000,000 in September, 1865. Even if the organization of national banks had proceeded so rapidly during the war period that the maximum circulation of \$300,000,000 would have been reached, the direct aid thus afforded the Treasury in the sale of bonds would not have been relatively great, since only \$333,000,000 in bonds would have been required to secure this amount of circulation, provided that the bonds had been issued at par. It is probable, however, that the purchase of even the relatively small amount of bonds required had a tendency to sustain the market price of all the bonds outstanding, because it effectively removed that amount of bonds from the market.

The disappointingly small issue of national bank notes during the war period was in large measure the result of the reluctance of the state banks to surrender their state charters and enter the National System, and the continued circulation of state bank notes in large quantities. The state bank-note circulation had reached a maximum of \$239,000,000 in 1863 before the National Banking System was established. Thereafter these notes declined in quantity, but there still remained in circulation \$170,000,000 of them in January, 1864, and \$126,000,000 in July of that year.² Naturally, if the state banks issuing these notes had joined the National System and had taken out an equal amount of national bank notes, a considerable additional demand for government bonds would have been created.

¹ Arrangements are now in effect to provide for retirement of federal reserve bank notes as well as of national bank notes.

² From Hepburn, *History of Coinage and Currency*, p. 327. By permission of The Macmillan Company, publishers.

5. THE STATE BANKS AND THE NATIONAL BANKING SYSTEM

When the National Banking System was established in 1863, there were approximately fifteen hundred state banks in operation. How slowly they applied for membership in the National System is indicated by the fact that in January, 1864, there were only 139 national banks, and in January, 1865, only 638, some of which were, of course, newly organized national banks and not converted state banks. It was not until the enactment of the law placing a prohibitory tax on state bank notes that the state banks decreased rapidly in number and were surpassed in number by national banks. By January, 1865, the number of national banks had increased to 1582 and in that year the number of state banks fell below 300. The state banks had been driven rather than coaxed into the National System.

Before the tax was placed on state bank notes, the National System had offered the state banks little that they did not already enjoy under state charters, while at the same time it placed various restrictions on their operations to which they were not subjected at all or were subjected in lesser measure under their state charters. The cash reserve requirements of the National System, for example, were more severe than those of many of the States. Other restrictions or burdens placed upon national banks that were more severe in many cases than those imposed by state banking laws included the following:

Loans to any one person or firm in excess of ten per cent of the capital of the bank were forbidden; interest rates were limited; holding of real estate was forbidden except that required for necessary use or acquired as a result of pre-existing debt; a surplus of twenty per cent of the capital had to be built up before all profits could be paid out in dividends; a tax of one per cent a year was levied on the average amount of notes in circulation, a tax of one half per cent a year on the average amount of deposits, and a tax of one half per cent a year on the amount of the bank's capital invested in government bonds; above all, the minimum capital requirements of the National System were much greater than such requirements under most if not all the state systems. All these restrictions and burdens placed upon the national banks represented just so many reasons why state banks refused to join. And there was doubtless a further reason that appealed to many state banks, namely, that the national banks were to be more carefully supervised than the state banks had been in many States, and this would make violation or disregard of the banking laws a much more serious matter than it had been in the past under state regulation. Local state officials, friends in many cases of the banker, would be more likely to condone, and less likely to punish, viola-

tions of the banking laws than federal inspectors working under the direction of a high and mighty Comptroller of the Currency located in Washington and holding a position comparable almost to that of a member of the President's Cabinet.

Even after the prohibitory tax had been levied on the state bank notes, many state banks preferred to remain state banks without the note-issue privilege rather than join the National System with the note-issue privilege. Their number never fell much below 250, and after 1870 they began once more to increase rapidly. By 1889 there were more state banks in existence than there were in 1863; by 1899, the number of state banks exceeded the number of national banks; and by 1914, when the Federal Reserve System was established, they outnumbered national banks by two to one.

6. THE VALUE OF THE NOTE-ISSUING PRIVILEGE

It was believed by many persons that the privilege of issuing bank notes conferred upon the national banks was an extremely valuable one, and that it permitted the banks to obtain double interest on their capital. Suppose, for example, the opponents of this privilege might argue, that a national bank invested \$100,000 in 5 per cent United States bonds at par, and obtained as a result the right to issue \$90,000 in bank notes, and suppose that it then lent the \$90,000 in notes to its customers at an interest rate of 7 per cent annually. Suppose, further, that when these loans were repaid the bank lent the proceeds again and again until the notes were finally presented to the bank for redemption. Under these conditions the bank would have enjoyed an income of \$5000 a year from the bonds and another income of \$6300 from the loans made in the form of the notes, or a total income of \$11,300 from an investment of \$100,000, or 11.3 per cent a year. If the bank had lent the \$100,000 in cash directly to its customers at 7 per cent, its income would have been only \$7000 a year. The value of the privilege was, therefore, \$4300 a year on a note issue of this amount.

This facile method of calculating the profits flowing from the note-issue privilege is based upon an imperfect understanding of the banking process as well as of the specific provisions of the National Banking Act. In our Chapter X the advantages of note issue to the individual bank were considered somewhat in detail, and the conclusions there reached may be repeated here. The individual bank with the privilege of issuing notes may make loans in three forms, namely, in the form of cash, deposits subject to check, and bank notes, while the bank which does not have the note-issue privilege can make loans only in the form of cash and

deposits subject to check. The total amount of loans and investments which any bank may make depends primarily, not upon the form in which it makes its loans, but upon its total resources and its cash reserve position. With some reservations, to be considered in a moment, it may be stated that the privilege of issuing notes does not tend to increase the total loan and investment power of a bank. A conservatively managed bank must maintain adequate cash reserves against its bank notes outstanding just as truly as against deposits subject to check, since it must be prepared to redeem either upon demand. It is true that the government bonds pledged as security for notes issued by a national bank may be considered as secondary reserve to be sold as a means of redemption of the notes issued; but it is also true that the bank might have purchased such bonds and held them in its own vault as a secondary reserve to be turned into cash to meet emergency demands of its depositors. If the ownership of such bonds may be calculated to make actual cash reserves against notes unnecessary, it would make unnecessary also cash reserves against demand deposits. Abrupt increase in the amount of its notes issued by either an old or a new bank may endanger the cash reserve position of the bank as a result of unfavorable clearing-house balances just as truly as an abrupt increase in its loans in the form of deposits subject to check or its investments.

There is, of course, the probability, which banks have often counted on in their policy of loan expansion, that bank notes placed in circulation may be returned less promptly for redemption than checks will be drawn against loan-created deposits. But counting on this probability does not represent sound banking, and a bank which expands its loans in the form of bank notes disproportionately to the expansion of loans and investments in the banking system as a whole is quite as likely to meet disaster sooner or later as if it had made its expansion through the medium of loan-created deposits.

While some national banks may have desired the note-issue privilege mainly because of this possibility of the demand for redemption of their notes being longer deferred than the demand for redemption of their deposits, the chief value of the note-issue privilege lay in the fact that, during the earlier years of the National Banking System, many borrowers preferred loans in the form of bank notes or other money to loans in the form of deposits subject to check. Business transactions were then settled more often by cash and less often by check than in later years. The question was often, not whether the bank should make a loan in the form of cash or deposits subject to check, but whether it should make it in the form of bank notes or other cash. Under such conditions the note-issue

privilege was valuable for the same reason that the privilege of making loans in the form of deposits subject to check is valuable today. A further advantage of note issue was that a bank might retain some of its own notes as working cash reserve, in excess of the legally required minimum which could not consist of the bank's own notes. That is to say, instead of keeping on hand perhaps \$10,000 excess actual cash reserve for emergencies, a bank invested this amount in interest-bearing bonds and kept on hand its own notes based upon these bonds.

Consider now the specific provisions of the National Banking Act in relation to the assumed profits of note issue under that act. Up to 1874, the national banks were required to maintain the same cash reserves against bank notes as against deposits. Moreover, the notes issued were subject to a tax of one per cent per annum.

In the hypothetical case of a bank investing \$100,000 in 5 per cent government bonds in order to obtain the right to issue \$90,000 in notes to lend at 7 per cent, the net income derived from the transaction was, therefore, much less than the \$11,300 previously assumed. If the bank was a country bank, it had to maintain a cash reserve of 15 per cent, or \$13,500, against the \$90,000 of notes issued. This sum, if lent at 7 per cent, would have yielded \$945 a year, and this amount, less whatever interest the bank might receive on that proportion of this legally required reserve which it could deposit with a reserve city or central reserve city bank, would need to be deducted from the supposed net gain of issuing notes, previously calculated at \$4300 for the \$90,000 of notes. Then the tax of 1 per cent on the notes issued would have amounted to \$900 a year, and this sum likewise would need to be deducted, so that the assumed net gain of \$4300 from this issue of the \$90,000 in notes is whittled down to something around \$2700, leaving out of consideration altogether the fact that the bank might presumably have made its \$90,000 in loans just as advantageously in the form of deposits subject to check as in the form of bank notes, in which case the loans would not have been subject to the tax of 1 per cent.

In 1874 the requirement that the banks maintain cash reserves against notes on the same basis as against deposits was stricken from the law, and the banks were thereafter required to maintain no cash reserve against their notes except a 5 per cent redemption fund on deposit with the Treasurer of the United States. But it should not be forgotten that no bank might safely go on the assumption that, since no actual cash reserves against its notes were legally required, none need be carried.

While the abolition of cash reserve requirements against notes issued presumably made their issue more attractive to the national banks, other

developments tended to counteract this factor. When in the years following the Civil War the United States Government began to pay off its bonded indebtedness, its credit improved and it was enabled to refund the debt still outstanding into bond issues bearing lower rates of interest. Not only was the nominal yield on the bonds thus reduced, but the actual yield declined even more, because, with a decreasing supply and an increasing demand for the bonds, their market price rose above par, and the actual yield fell below the coupon rate. In time even the bonds with a coupon rate of only 2 or 3 per cent rose above par, so that the actual yield was less than 2 or 3 per cent instead of the 5 per cent of our hypothetical example. The culmination of the decline in the rate of interest paid on United States bonds between the Civil War and the establishment of the Federal Reserve System in 1914 came in 1900, when provision was made for the ultimate refunding of all the United States bonds into 2 per cent bonds. As an offset it was provided at the same time that thereafter national banks might issue notes up to 100 per cent of the par value of the bonds deposited in the Treasury, and the tax on the notes in circulation secured by these bonds was reduced from the former figures of 1 per cent to one-half per cent. Thereafter, while the banks still retained the privilege of issuing notes secured by 3 per cent bonds still outstanding, they could secure no new bonds yielding more than 2 per cent on par.

Under these conditions there was little to be gained by the issue of notes. If, for example, a bank had \$100,000 in excess cash reserves, it might either lend this amount in cash loans at, say 6 per cent, or it might invest \$100,000 in 2 per cent bonds at par and obtain thereupon the privilege of issuing additional notes to the amount of \$100,000, which it could then lend at 6 per cent instead of the original cash. On the bonds it would obtain an annual income of \$2000, from which the tax of \$500 would have to be deducted, leaving it a net gain from the issue of \$1500 over and above the income it would have had by lending its own cash. If its notes were secured by 3 per cent bonds, they were subject to a tax of 1 per cent, leaving a net gain from the issue of \$100,000 of them of \$2000 a year, provided the bonds could be bought at par. When the banks paid more than par for the bonds, their net gain was sharply reduced, and they might actually suffer a loss. All this leaves out of consideration the 5 per cent cash redemption fund maintained in the United States Treasury, amounting to \$5000 for a \$100,000 note issue, which might have been lent at, say 6 per cent, or \$300 a year. Moreover, it leaves out of account the fact that no bank could safely go on the assumption that no cash reserve was required against outstanding notes

merely because none was required by law, and it omits from consideration that the cash paid for the bonds as a condition of note issue might have been utilized as a cash reserve against loan-created deposits subject to check.

Taking all these things into consideration, it becomes more easy to understand the attitude of the state banks toward the National Banking System. In 1866, when the prohibitory tax was first levied on the notes of state banks, note issue was considered so attractive that most of the state banks joined the National System. Later, when the changing habits of the business world led to an increasing use of bank checks and the interest rate on United States bonds declined to much lower levels, the note-issue privilege became less desirable and did not offset, in the opinion of officials of state banks, the advantages offered by state charters. The result was that the state banks increased rapidly in number, particularly after 1900, until they were more than twice as numerous as the national banks when the Federal Reserve System was established in 1914. As for the national banks themselves, many of them valued the note-issue privilege more highly as an advertising medium than as a direct source of profit, and they valued their national charter as a source of prestige and confidence rather than as a means of obtaining the special privilege of issuing bank notes.

7. DEFECTS OF THE NATIONAL BANKING SYSTEM

The National Banking System, in its fifty years of life from 1863 to 1913, proved to be immeasurably superior to the execrable mixture of thirty-four state banking systems that the country had had before it was adopted. But it fell far short of being a good banking system because it did not meet these two fundamental tests of a good banking system:

1. In a good banking system no bank, prudently managed and observing the provisions of the banking laws, will need to face failure because of defects in the system as a whole.

2. A good banking system will neither permit such an expansion of bank credit as to generate a speculative rise in prices of securities, real estate, or commodities, nor force a ruinous decline in business activity and prices as a result of a monetary stringency and contraction of credit.

That the National Banking System could not meet either of these important tests of a good banking system was the result of a number of defects in the law under which it was organized, the more significant of which will now be considered in some detail.

8. THE NATIONAL BANKING SYSTEM A MISNOMER

The outstanding defect, and the mother of many of the other defects of the National Banking System, was that it was not a true system of banks at all. System implies some degree of organization or structure; some differentiation of parts and functions of parts. Of this our National Banking System had very little; practically speaking, it represented an amorphous mass of unco-ordinated unit banks spread over the country in an extreme condition of decentralization. The classification of the national banks into three groups — country banks, reserve city banks, and central reserve city banks, with dissimilar reserve requirements — was misleading if it was meant to imply a differentiation of function and a measurable degree of organization. The National Banking System was a system without a head, and it is not surprising that its action in time of crisis resembled the futile antics of a decapitated chicken in the process of being drained of its life blood. But the term "National Banking System" was a misnomer for another reason when used to describe our banking system as a whole as it existed from 1863 to 1913. During this period we had not a single system of banks, but one system of national banks existing alongside numerous systems of state banks, reaching finally the number of forty-eight.

The state banks performed the two essential functions of commercial banking, namely, making loans and accepting deposits subject to check, and they were entirely outside the control of the National Government. In the panic year of 1907 the individual deposits of the state banks exceeded \$3,000,000,000, and those of the loan and trust companies, banking institutions also under state control, exceeded \$2,000,000,000, and the combined deposits of these two classes of banks under state control exceeded by a substantial sum the deposits of the national banks, amounting then to \$4,323,000,000. In numbers also, the state bank and trust companies far exceeded the national banks. Even if the National Banking System proper had been effectively organized as a true system of banks, the large number and the enormous resources of the state banks and trust companies not under federal control would have made it practically impossible to meet the requirements of a good banking system.

9. NO EFFECTIVE CONTROL OVER EXPANSION OF BANK CREDIT

A good banking system, it has been stated, will not permit such an expansion of bank credit as to generate a speculative rise in the prices of securities, real estate, or commodities. The National Banking Act, with its various amendments, made no provision for preventing such expan-

sion of bank credit beyond that represented by the cash reserve requirements in respect to deposits and the restrictions laid upon the issue of national bank notes. Now, obviously, the requirement that the national banks maintain cash reserves against deposits, ranging from fifteen per cent for country banks to twenty-five per cent for reserve city banks and central reserve city banks, restricted the power of the banks individually and as a whole to expand credit in the form of deposits subject to check. The country banks could not expand their deposits subject to check to more than six and two thirds times their cash reserves, and the other banks could not expand theirs to more than four times their cash reserves. Had it not been for the permission granted to the country banks to deposit three fifths of their required reserves with reserve city and central reserve city banks, and a like permission granted to reserve city banks to deposit half of their required reserves with central reserve city banks, the total deposits subject to check of all the banks in the system could not in the aggregate have exceeded their aggregate cash reserves more than five times, provided that the aggregate deposits of the country banks had not exceeded the aggregate deposits of the other two classes of banks combined. But these redeposit provisions made possible a somewhat greater expansion of deposits relative to cash reserves. This is a point of great importance and calls for further consideration, not only because the redeposit provisions made possible greater expansion of credit than the reserve requirements indicated at first sight, but because they gave rise to so-called fictitious reserves which made the banking situation appear superficially stronger than it really was, and because the redeposited reserves represented a great source of danger, in time of stress, to the banks in which they had been deposited.

This whole matter can be clarified most readily, perhaps, by a concrete example:

Suppose that a country bank with deposits of \$2,000,000 had exactly the minimum required reserves — fifteen per cent of \$2,000,000, or \$300,000. Three fifths of these reserves, or \$180,000, it could deposit with a reserve city bank. Against this deposit of \$180,000 the reserve city bank was required to maintain cash reserves of twenty-five per cent, or \$45,000, one half of which, however, it could deposit with a central reserve city bank. Against this deposit of \$22,500, the central reserve city bank had to keep a reserve of twenty-five per cent, or \$5625; all in its own vaults. Total stated reserves of the three banks, so far as they were related to the deposits of this example, would have been \$350,625, the sum of reserves required to be kept in the banks' own vaults or in other banks. Actual cash reserves available to safeguard deposits of the

three banks would have been, however, only \$148,125, or the amount kept in their own vaults by the three banks. In short, actual cash reserves in this case needed to be only forty-two per cent of stated reserves. It should be added, however, that in the case of deposits originating in the central reserve city banks — deposits other than those belonging to reserve city and country banks — the actual reserve was equal to the stated reserve, so it would not be correct to state that for all the banks in the system the reserves actually required were less than half the stated minimum required reserves.

But in practice the fictitious reserves did tend to represent a large proportion of total stated reserves. For example, on October 21, 1913, shortly before the Federal Reserve System was inaugurated, the 7509 national banks held cash in their own vaults of \$926,000,000. This was their actual reserve. There was due to them from other banks \$792,000,000, representing fictitious reserves, making a total of stated reserves of \$1,718,000,000. The actual reserves were at this date 54 per cent of stated reserves, indicating that the banks were making full use of their privilege of depositing part of their reserves in other banks. Actual reserves were at this time 12.8 per cent of total deposits, when as a matter of fact they appeared to be 24 per cent. Instead of deposits in the national banks in the aggregate being only about four times total cash reserves, they were about eight times total cash reserves.

Regardless, however, of whether the minimum cash reserve requirements were such as to limit deposits to four or five times cash reserves or to eight times cash reserves, such a method of limiting expansion of bank credit does not represent a scientific attempt to regulate bank credit with the end in view of, so far as possible, maintaining stability of the price-level. As previously explained, banks in competition with one another and not subject to external control tend to expand credit up to the limit of the minimum cash reserve requirements, so that expansion of credit tends to proceed rapidly up to the point where reserves are down to the minimum and thereafter to proceed as rapidly as cash reserves can be increased. This rate of expansion may be quite different from the rate of expansion of the physical volume of production and trade.

The expansion of credit by state banks was limited in the same way, by minimum cash reserve requirements, although the requirements under state law tended to be lower than under the National Banking Act. Any increase in the quantity of money in the country tended, of course, to bring an increase in the cash reserves of the state and national banks, and thus to bring about a further expansion of bank credit, and

it made little difference whether the source of the increased supply of money was a favorable balance of trade leading to imports of gold, increased domestic production of gold, the purchase and coinage of silver under the Bland-Allison and Sherman Acts, the increased activity of the government printing press, or finally, the issue of the notes of the national banks themselves. Fortunately, the extreme imbecility of permitting the national banks to count their own notes as cash reserve was not perpetrated, although this measure was advocated in some quarters, but the state banks could count the national bank notes as cash reserve, so that the effect upon the total credit expansion in the country was much the same as if the national banks themselves had been permitted to include national bank notes as legal cash reserves.

The saving factor in this particular situation was this: In the early years of the National Banking System, an absolute maximum of \$300,000,000 was placed upon the issue of national bank notes, and in later years the low rate of interest on the bonds, their increasing scarcity, and in general the small profit that national banks individually could make directly from their issue kept the amount of them in circulation at relatively low levels. Had it not been for this restriction upon the issue of national bank notes, the National Banking System would have become an engine for creating wild inflation, and would have generated panics much more disastrous than those usually attributed to its operation. In truth, the chief evil that may be justly charged against this system was not that it generated wild inflation, for it did not, having been too much hampered by its cash reserve and note-issue regulations. Its great fault was that it tended constantly to expand credit to the utmost of its rather limited capacity, and thereafter held in reserve no power for further expansion of loans in time of stress, and no means of meeting abnormal demands for cash and preventing disastrous forced liquidation of loans and suspension of specie payment. As an engine of inflation the Federal Reserve System, as we have found to our great cost, has proved to be infinitely more powerful and destructive than the National Banking System which it displaced and over which it was believed to represent an improvement.

10. NO PROVISION FOR REDISCOUNTING COMMERCIAL PAPER

Consider now why the National Banking System could not meet that test of a good banking system which requires that the individual banks operating on a reasonably sound basis be at all times able to meet their demand liabilities by the prompt payment of cash. As stated in the preceding paragraph, the individual banks under this system tended

always to expand credit to the maximum limit permitted by the cash reserve and note-issue requirements. This condition did not necessarily represent unsound banking from the point of view of the individual bank. If, for example, a country bank held cash reserves of only fifteen per cent of its deposits, but held promissory notes of its customers, and good bonds, or other legal investments, considerably in excess of the remaining eighty-five per cent of its deposits, and if it owned government bonds with a market value in excess of its outstanding notes, it might reasonably have been held to be in a sound condition, particularly if the promissory notes were for short periods of from one to six months, and certain, for the most part, to be paid at maturity. Yet a bank in this apparently sound condition, with good assets substantially in excess of demand liabilities in the form of deposits and bank notes outstanding, was actually, under the National Banking System, constantly in a precarious condition with the possibility of failure or at least temporary involuntary suspension of cash payment always just around the corner.

One possibility was that of a sudden run on the bank by frightened depositors, bringing a sharp and abnormal demand for cash which would quickly exhaust both its cash reserve in vault and its cash reserve on deposit with other banks when this was called in. The secondary reserve in the form of good bonds, even if promptly sold for cash, could not save it; and its prime assets in the form of short-term notes of responsible and solvent borrowers might be unmarketable. There was no provision made under this system for "rediscounting" such commercial paper; there was no market to which the bank could turn with the assurance that these prime assets would be converted promptly into cash to meet its sudden emergency. A good banking system requires that such a market be provided, where solvent banks can market safe and sound promissory notes or other like commercial paper and obtain actual cash to meet unjustified and panicky runs by their depositors. Under the National Banking System there was the possibility, of course, that a bank thus threatened with ruin might obtain cash from other banks, but when one bank is being subjected to a run, however unjustified the run may be, other banks are likely to refuse aid in the form of cash, simply because they fear the run may lead to other runs and they hold on to their own cash. This ever-present risk a commercial bank under the National Banking System had to assume, since no bank could operate at a profit without investing a large part of its available funds in the promissory notes of its customers, which, in time of stress, could not with certainty be converted into cash.

11. SEASONAL DEMANDS FOR CASH

Consider next a set of circumstances and conditions under which suspension of specie payment tended to be forced, not merely upon one or a few soundly managed banks of the National Banking System, but upon all the banks in the system, good and bad alike. It has already been stated that under the National Banking System the individual banks constantly tended to expand credit up to the limit permitted by the minimum cash reserve requirements, so that, for example, a country bank with cash reserves of \$60,000 would tend to have deposit liabilities of \$400,000, and a reserve city bank or a central reserve city bank with reserves of \$1,000,000 would tend to have deposit liabilities of \$4,000,000.

Because this cash reserve in the bank's own vaults represented idle, non-income-producing capital, the country banks and the reserve city banks made free use of the permission granted to them to deposit part of their reserves in other banks, where they might draw a low rate of interest. Most of these redeposited reserves tended to be concentrated in a comparatively small number of large national banks in New York City, which paid interest on them at a rate varying with conditions in the New York money market, a common rate being two per cent a year. These depository banks in turn were able to lend seventy-five per cent of such deposits to stock-brokers in the form of call loans, payable upon twenty-four hours' notice, and secured by stock-market collateral — that is, by stocks and bonds listed and dealt in on the New York Stock Exchange. The assumption of the law was that, since the redeposited reserves were payable by the depository banks upon demand, they could safely be considered so much actual cash by the depositing banks. Even if the depository banks did not at the moment of demand have sufficient cash on hand to make payment, they could easily obtain the amount required by calling loans or selling investments. This assumption was perfectly sound if the case of only one bank or a few banks was considered, but it was not sound when there was involved the case of a very large proportion of all banks desirous of increasing their actual cash on hand at the same time; and such a simultaneous demand for more cash by many banks tended to occur frequently under the existing economic conditions.

During the crop-moving season of late summer and early autumn, for example, the agricultural sections of the United States have in the past regularly experienced a greater demand for cash than in the slack seasons on the farm. In these busy seasons the farmers buy more supplies and hire more labor than in other seasons, and having in the past paid such bills largely in cash have required more cash on hand. Moreover, the

local buyers of farm products have paid the farmers in cash, or in bank checks, and if in checks, the farmers have tended to cash these checks promptly at their local banks. Under these circumstances the banks in the agricultural sections experienced a heavier drain of cash than usual. A similar but less pronounced demand for cash was felt in the agricultural sections in the crop-planting season in the early spring.

Another period of seasonal demand for cash is represented by the Christmas shopping period, and in a lesser way by other holiday periods, when banks in all parts of the country are called upon temporarily to pay out more cash than they receive from their ordinary sources of supply.

Foreign trade operations also represent a source of demand for cash. In foreign trade there are marked seasonal fluctuations in the value of imports and exports, so that a country which on the average, year after year, may have a well balanced trade — both the visible and the invisible imports and exports being considered — will for weeks or months have such an excess of imports as to be subject to the hazards of heavy exports of gold, and this gold will ordinarily be drawn from the cash reserves of the commercial banks unless there is a central bank to supply it, or to regulate its flow.

Under the Independent Treasury System, which was in existence during the entire lifetime of the National Banking System, the financial operations of the Government often resulted in a drain upon the cash reserves of the banks, particularly in the financial centers. The reader will recall that under the Independent Treasury System the government funds were locked up in the Treasury and the sub-treasuries, and thus kept separate from the money in circulation and in the banks. Consequently, when government receipts exceeded government expenditures, as they often did, cash was drained out of circulation and out of the bank reserves, and piled up in the Treasury.

12. THE FUTILE SCRAMBLE FOR RESERVES

Consider now what would happen if for any of the foregoing reasons a large number of banks under the National Banking System suffered a simultaneous drain upon their reserves and undertook to replace the lost reserves. Take first the case of a country bank with deposits of \$1,000,000, and with reserves, slightly above the legal minimum, of \$170,000, \$90,000 of which was on deposit with a New York bank. Suppose that during the early days of the crop-moving season demands for cash paid out across its counter reduced its actual cash on hand by \$50,000 to the dangerously low figure of \$30,000, and its total legal

of loans, or restriction of new loans and investments, it endeavored to obtain a favorable clearing-house balance and thus increase its cash reserve, it could succeed only to the extent that other banks attempting to do the same thing failed.

13. THE INELASTIC MONEY SUPPLY

Regardless of how many investments were sold or how many loans were called, and regardless of how sparingly new loans and investments were made by the banks, the banks as a whole could gain no additional cash except from the following sources:

1. A flow of money out of circulation into the banks.
2. Imports of gold.
3. Disbursements of the Treasury, or transfers from the Treasury to the banks.
4. An increase in the supply of credit money issued by the Government or the banks.

The first-named source may be dismissed at once. Money cannot ordinarily be drawn into the banks out of general circulation except by such a severe degree of deflation of bank credit and prices as to make the money in circulation redundant, unless some measure of co-operation among the banks is forced upon them by some centralized agency acting as the head of the system, as under the Federal Reserve System to be discussed later.

Imports of gold cannot be controlled by a decentralized banking system, without a head, such as the National Banking System, and any relief from this source had to be accidental in nature. When the banking system was in need of additional cash reserves, gold exports were more likely to be the rule than gold imports, and were themselves, in fact, as indicated, one of the causes of a deficiency in aggregate cash reserves.

If the Government Treasury had excessive funds on hand, it might, and in some cases did, deposit them in so-called "depository banks" to help relieve monetary stringencies, but this source of relief was uncertain, generally inadequate and subject to being used for personal or partisan considerations.

The Government could not increase the amount of gold money except to the degree that gold bullion was offered for coinage at the mint. To increase the amount of other kinds of money — credit money, in the form of undervalued silver or greenbacks — was to resort to an unsound practice and one destructive of confidence in the whole monetary

system when indulged in, as under the Silver Purchase Acts of 1878 and 1890. Moreover, such issues of government credit money could not be effective in relieving monetary stringencies such as those under consideration, often developing suddenly and unexpectedly, unless Congress delegated the power of issuing money to an administrative commission to be employed at its discretion in time of stress.

Under the National Banking System, the banks could issue no money other than the national bank notes, and their issue was subject to such conditions that the aggregate amount issued tended to decline rather than to increase in times of financial stress when the banks individually and in the aggregate were short of cash reserves. Consider the position of a bank suffering from a deficiency in cash reserves, but with \$100,000 of national bank notes outstanding, secured by the pledge of not less than \$100,000 worth of government bonds plus \$5000 of cash in the redemption fund in Washington. By redeeming its notes it would obtain possession of its \$100,000 in bonds and its \$5000 redemption fund, and thus gain a net addition to its cash, if it could sell the bonds at par, of \$5000. In the process, the aggregate amount of money in the country would be reduced by \$100,000 and the banks as a whole would be subjected to an additional drain of cash reserves into circulation, to fill the void left by the withdrawal of the \$100,000 in bank notes.

There was, therefore, under the National Banking System no dependable and adequate source of supply of additional cash reserve for the banks in the aggregate in time of stress. On the contrary, in such times the total amount of cash in the country tended to decline, and when the banking troubles became generally known, the drain of cash out of banks into the hands of the people was accentuated by the fear of bank failures which impelled timid persons and business organizations to hoard whatever cash they could lay their hands upon.

It was small wonder, therefore, that more or less severe monetary stringencies developed seasonally in the crop-moving, crop-planting, and holiday seasons, and when imports exceeded exports, or government revenue exceeded government expenditures; and that there was the ever-present danger that such monetary stringencies might develop into disastrous financial panics, involving a mad scramble among the banks for the available cash reserves, widespread runs on banks, general suspension of cash payment by banks, and consequently thousands of failures among business concerns which under a sounder banking system might have remained solvent.

14. FORCED LIQUIDATION

If one of these periodical drains of cash found the banks of the country well supplied with excess reserves, no great trouble necessarily followed. The banks in the interior, for example, might recall the New York City deposits in the crop-moving season with no worse results than heavy calling of loans by the New York banks, with consequent selling of stocks and bonds on the New York Stock Exchange and more or less severe temporary declines in stock-market prices. In fact, this happened so regularly that shrewd speculators had learned to expect a rise in stock quotations in seasons of easy money and declines in the late summer and early autumn, when the movement of cash into the interior forced the calling of stock-market loans.

Perhaps it is not clear to the reader why the calling of loans by the New York banks should result in the selling of stocks and a decline on the stock market, so that a brief explanation may be in order. If only one New York City bank had been called upon to remit cash into the interior and had been compelled to call loans, no selling of stocks and decline in prices need have resulted. The borrower could in that case have paid off the loan at this bank by borrowing from another bank. But when all the banks engaged in making such loans were called upon simultaneously to meet demands for cash and all were calling loans rather than making new loans, stock-market loans became hard to get. "Call money" became scarce and the rate of interest charged rose to very high figures, sometimes above the rate of one hundred per cent a year. This charge was paid by the broker and by him shifted to the customer, and when it became so high as to represent a heavy burden, speculators sold stocks to reduce their debts. This increased the number of shares offered for sale; at the same time, demand for stocks fell off, since few speculators cared to borrow at excessive rates to buy stocks. Thus, with supply increasing and demand decreasing, the price of stocks tended to fall sharply.

When a temporary monetary stringency found the banks in the aggregate short of reserves rather than with an excess above legal requirements, the scramble for reserves became panicky. Banks called loans and sold investments right and left. Stocks and bonds, commodities, and real estate were all forced on to a sinking market — a market receding under the pressure of increasing supply and declining demand. While under these conditions the banks in the aggregate could not increase their cash reserves absolutely, they might thereby increase their reserve ratio, because the liquidation of loans and investments would result in a simultaneous reduction of deposits. For example, if Bank A

demanding payment of a \$1000 loan from John Doe, one of its depositors, he would probably pay either by a check drawn against his account with Bank A or against his account in another bank. In either case the deposits of some bank would be reduced by the amount of the check, while there would be no corresponding increase in deposits in any other bank. Similarly, if Bank A sold an investment, say a bond for \$1000, to Richard Roe. He would pay with a check drawn against his account with Bank A or with a check drawn against his account with another bank. Again the deposits of some one bank and the deposits of all banks in the aggregate would be diminished by the amount of the check.

If, now, fear had not grown to larger and larger proportions as the process of liquidation developed, the process might have ended when the liquidation of loans and investments had proceeded far enough to restore the reserve ratio to the minimum required by law. But once panicky fear developed, the process of liquidation did not stop here, but ran on to a disastrous conclusion. The lower the prices of securities, real estate, and commodities fell, the more insistent banks became that loans secured by such property should be paid at maturity and the less they were inclined to grant new loans. Moreover, as more banks were forced to close, more runs developed on other banks and the more severe became the drain on the cash reserve of all those remaining open. When the state of fright was reached that made it impossible for banks to meet the growing demands for cash, general suspension of cash payments by good and bad banks alike became inevitable.

15. THE CRISIS OF 1873

In the preceding section the defects of the National Banking System have been considered from the purely abstract point of view. On the basis of the provisions of the law and the principles of banking conclusions were drawn upon what would naturally tend to be the results achieved under the system. Incidentally, allusions were made to the crises that actually developed under the law — the development of which ought to have been easily foreseen by anyone conversant both with the provisions of the law and banking principles. Limitations of space will not permit in this chapter any detailed description of the crises — minor and major — under the National Banking System during its fifty years of life, but a few significant facts may with profit be presented relating to the three great crises of 1873, 1893, and 1907, each of which resulted in general suspension of specie payment by banks throughout the country. These facts are drawn from the excellent and detailed report upon the *History of Crises under the National Banking*

System, prepared for the National Monetary Commission by Professor Sprague.¹

The crisis of 1873 broke in September of that year, having been ushered in with the failure of the important stock-brokerage firm of Jay Cooke and Company and a number of other failures of stock-brokerage concerns, and with runs on and failures of large banks in New York City. The stock market became so thoroughly demoralized that the New York Stock Exchange was closed and remained closed from September 20 to September 30. By September 24 the New York City clearing-house banks had been compelled partially to suspend cash payments, and suspension throughout the country followed within a few days.

Despite the fact that the banks in general were compelled to suspend specie payment temporarily — the suspension lasted only about three weeks — only a few of the banks actually failed, and those which were compelled to liquidate were found to have been mismanaged. As for the other banks, they were in a condition of normal strength and solvent at the time of suspension. The general suspension was the result of the defects of the system and not of general mismanagement of the individual banks.

When the panic broke, the country banks had on deposit with reserve agents — mainly in New York City — \$64,000,000. Between September 12 and October 13, they withdrew all but \$38,000,000 of these deposits, and reduced their deposits with other banks also from \$21,000,000 to \$17,000,000, their total withdrawal of cash from reserve agents and other banks having been thus \$30,000,000. During the same period they had actually managed to increase their total holdings of cash, including bank notes and legal tenders, by more than \$3,000,000, so that in this scramble for reserves the country banks as a group were highly successful, at the expense of the other two classes of banks. Nevertheless, they felt impelled to cut down loans to their customers from a total of \$478,000,000 on September 12, to \$455,000,000 on October 13, or about 5 per cent. By this reduction in loans and by the payment of cash into circulation they reduced their deposit liabilities by \$45,000,000, this decrease having been in part offset by an increase of \$5,000,000 in the amount due to other banks. While this may not seem to have been a great reduction in deposits, it represented a reduction of more than 15 per cent, a serious contraction over a period of one month. Incidentally, contrary to what one might suppose, the country banks expanded note circulation during this month by approximately \$2,000,000, this expansion apparently having been made

¹ Printed in 1910 as a *Report of the National Monetary Commission*, Senate Document No. 538.

possible by the possession of some millions of dollars of government bonds not yet pledged to secure note issues at the time.

The reserve city banks during this period reduced loans in about the same proportion as the country banks, but the New York City banks contracted loans more sharply, the reduction in this case having been about 10 per cent. The sharper contraction of loans was forced upon the New York City banks because they were compelled to bear the burden of the drain of cash out of the banking system into circulation. The country banks, as has been seen, actually increased their cash on hand, and the reserve city banks and central reserve city banks outside of New York City likewise drew upon New York for cash more than upon their own supplies to meet the demands of depositors. The result was that the cash reserves of the New York banks was sharply reduced in the period from September 12 to October 13 — from \$49,000,000 to less than \$21,000,000.

One interesting circumstance was that, in the general contraction of loans forced upon the New York banks, they were able to reduce their call loans relatively less than their other loans — presumably because of inability of the borrowers on call to liquidate their loans except upon such a ruinous sacrifice of the stock-market collateral as to destroy their ability to pay at all.

The panic of 1873 would have been much worse and its after effects more serious if the New York City banks had not developed a wise and public-spirited system of co-operation which checked in a considerable measure the scramble for cash reserves in New York City. Their policy of co-operation involved the use of two expedients — the clearing-house loan certificate and the equalization of reserves. By agreement among the banks each member of the Clearing-House Association was given the privilege of depositing with a designated committee approved collateral upon receipt of which the committee was authorized to issue to the bank clearing-house loan certificates which it could use in settling unfavorable balances at the clearing-house. The purpose of these certificates was to diminish the incentive of the individual banks to restrict loans as a means of avoiding unfavorable balances at the clearing-house which would have to be paid in cash. If a bank could meet such balances with clearing-house certificates instead of cash, it would tend to lend more freely, and to the extent that all lent more freely the contraction of loans and forced liquidation would be mitigated; and the very fact that all the banks could thus use such certificates instead of cash would tend to make it unnecessary for any of them to use them on a large scale.

The equalization of reserves was necessary as a condition of the successful use of the clearing-house loan certificates. Some banks would naturally lose much cash across their counters, and if they could not obtain cash as the result of favorable clearing-house balances would be compelled to suspend cash payment. Suspension of one bank would naturally have led to runs on others, intensifying the strain on all the banks in the system. The banks wisely agreed that in respect to that part of their cash reserves represented by greenbacks — and most of their reserves were in this form in 1873 — they would form a pool, and any one bank subjected to a drain of cash would receive aid from the others. By this virtual pooling of reserves the New York banks performed one of the main functions of a central bank. By extra-legal methods they gave the National Banking System temporarily what it had not been provided with by its creators — a head. As a result of this method of co-operation the New York banks were enabled to pay out cash more freely to the country banks and to lend more freely to their own customers, so that the contraction of credit and forced liquidation of loans was much less disastrous than it otherwise would have been. For this action by the New York banks in 1873 they have been warmly commended by Sprague. Unfortunately, as he points out, this same degree of public-spirited co-operation was not achieved in the crises of 1893 and 1907.

16. THE CRISIS OF 1893

In February, 1893, occurred the failure of the Philadelphia and Reading Railroad which had undertaken speculative ventures not justified by its available resources, involving heavy short-term loans. This naturally was a severe shock to the stock market. Early in May came the disastrous failure of the financially mismanaged National Cordage Company and a stock-market collapse. These failures can hardly be said to have caused either the stock-market collapse or the banking panic that followed within a short time. They represented merely symptoms of the unsound business conditions and practices out of which financial crises grow. The banking crisis did not develop immediately after the severe market crash early in May. In fact, the New York banks actually strengthened their position during the month of May, and on May 27 had a reserve ratio of 30.82 per cent, and excess cash reserves of more than \$25,000,000, both the reserve ratio and the amount of excess reserves having been greater than at the corresponding date of the previous year.

In June, however, a heavy drain of cash from the New York banks to

the interior developed, and by June 17, the surplus reserves of the New York banks had been reduced to less than \$9,000,000 from the \$25,000,000 of three weeks before. This withdrawal of cash from the New York banks Sprague attributes directly to the failure and suspension of a large number of banks in the West and South. In most cases these failures were the result of violations of the banking law and imprudent methods of banking, but some of the failures could be charged to the abnormally large number of mercantile failures during the period from January to July, 1893, the number of such failures having been 3401, with liabilities of \$169,000,000 — an appalling record. But whatever was the first cause of the withdrawal of New York deposits, there had developed all over the country a distrust of the New York banks and they were faced with a "run," and they had but a negligible amount of surplus reserves with which to meet it.

On June 15 the New York banks made provision for the issue of clearing-house loan certificates, the purpose of which has already been described in our discussion of the crisis of 1873. The issue of these certificates, Sprague points out, became associated in the public mind with suspension of specie payment by the banks, but as a matter of fact did not represent such suspension. They were used only to settle balances among banks at the clearing-house, and cash might still be paid out to customers upon demand across the counter. At this time the banks continued to pay cash upon demand to their customers after the clearing-house loan certificates were put into use at the clearing-house.

The New York banks continued to lose cash, and by July 8, they had a deficiency in reserves of more than \$5,000,000. As in 1873, the country banks actually increased their cash holdings while the reserves of the New York banks were correspondingly drawn down. At the same time the New York banks had reduced their loans in relatively smaller measure than the country banks, and for a while it seemed that they might weather the storm and escape the necessity of suspension. But in the latter part of July came a series of bank failures in the interior and the failure of the Erie Railroad, forced into receivership by a large floating debt. A renewed run on the cash reserves of the New York banks followed. Stocks declined, call-money rates rose to a rate of 74 per cent per annum, and suddenly the banks throughout the country, beginning in New York, suspended cash payments. Sprague attributes the necessity for suspension in the case of the New York banks to the fact that, while they had resorted to the use of clearing-house loan certificates in settling clearing-house balances, they had not, as in 1873, adopted

the policy of equalization, or pooling, of reserves. As a direct consequence of this failure to pool reserves, those New York banks which had many correspondent banks in the interior were called upon to cash many drafts across their counters, but could not replenish their cash supply through favorable balances at the clearing-house. Thus suspension was forced upon them. The banks as a whole in New York had large supplies of cash left on hand at the worst stage of the panic, although their reserves in the aggregate were below the legal minimum of 25 per cent. Some of those with the more ample reserves and smaller bankers' deposits were able to maintain cash payment. Suspension, while "general," was not complete.

After general suspension of cash payment by the New York banks cash rose to a premium in terms of deposits — the premium continuing thirty days and reaching a maximum of four per cent. The buyers of currency were banks, employers who had to have cash to meet payrolls, and others. One result of the currency premium was that it stimulated the import of gold, the imports of gold during the four weeks ending September 2 having amounted to the abnormally large figure of \$40,000,000. These gold imports, in turn, permitted the New York banks to build up again their cash reserves which had been depleted by the shipment of cash into the interior.

Naturally, the general contraction of bank loans was an important feature of the banking crisis and the scramble for reserves, and this inflicted heavy damage upon the unfortunate customers of the banks. In the five months from May 4 to October 4, the loans of national banks were contracted from \$2,161,000,000 to \$1,843,000,000, a contraction of \$318,000,000, or almost 15 per cent.

17. THE CRISIS OF 1907

The crisis of 1907 marked the culmination of a ten-year period of almost uninterrupted prosperity and rising prices, resulting in large measure from a great rise in the annual production of gold and steadily mounting gold reserves in the leading industrial countries of the world. Along with the increase in the gold supply and bank reserves went quite naturally a great expansion in bank deposits and loans. Cash reserves of the national banks rose, for example, from \$389,000,000 in October, 1897, to \$702,000,000 in August, 1907, an increase of more than 75 per cent. But loans and deposits rose in even greater proportion, loans rising during the same period from \$2,066,000,000 to \$4,678,000,000, and deposits from \$2,179,000,000 to \$5,256,000,000, the increase in each case having been considerably more than 100 per cent. Since deposits

rose relatively more rapidly than cash reserve, the reserve ratio fell, the ratio for all national banks having been 17.9 per cent on October 5, 1897, and only 13.3 per cent on August 22, 1907. As for the state banks and trust companies, they had increased their resources and liabilities even more rapidly during this ten-year period than had the national banks, and were in a relatively weaker position in respect to cash reserves.

Both the national banks and the state banks and trust companies outside New York City had heavy deposits with the New York City banks. Another disturbing factor was the fact that the New York trust companies, with their inadequate reserves, might, in time of crisis, withdraw large sums from the New York money market, and thus throw additional burdens upon the national banks. Finally, there was the fact that outside banks had developed the practice of making loans to New York business organizations, and more than \$300,000,000 of such loans are estimated to have been outstanding in 1906. At the first sign of trouble such loans would tend to be withdrawn. The net amount due from the New York banks to other national banks alone on August 22, 1907, was \$214,000,000, with another \$196,000,000 due to state banks and trust companies. In view of these facts, it is obvious that the stage was prettily set for a banking panic in New York following quickly upon the heels of any particularly disturbing bit of financial news. The situation was not made any better by the tremendous amount of speculation in commodities, securities, and real estate engendered by a long period of persistently rising prices.

Signs of impending financial disaster were not lacking in the earlier months of 1907. There was a sharp crash on the New York Stock Exchange in March, resulting from the calling of loans by New York banks, which in turn was the result of a tightening of the reins of credit by the Bank of England, which considered that further extension of credit to American bankers was dangerous. Monopolistic control of the copper market, which had driven the price of copper up to 27 cents a pound early in 1907, began to show signs of breaking down in July, and by October the price had fallen to 13 cents, with buyers even then refusing to buy, as is usually the case when prices are falling.¹ The manipulation of the price of copper was tied up with manipulation of the shares of copper companies and other speculative ventures, and into this dangerous speculation were drawn several New York banks and trust companies with deposits aggregating \$71,000,000. Runs on these

¹ History strangely repeated itself in respect to such monopolistic control and collapse of the copper market in 1929. The period of collapse and depression of 1929-33 shows many other striking similarities to the crises of 1873, 1893, and 1907.

banks resulted early in October, but since the banks were not large and the total amounts involved relatively small the clearing-house banks by concerted action were able to extend enough help to the banks in trouble to save the situation temporarily.

Panic did not develop until October 21, when the National Bank of Commerce, a member of the clearing-house, announced that it would discontinue clearing for the Knickerbocker Trust Company, a non-member, on the following day. A run on the Knickerbocker followed and it was compelled to suspend cash payment. This was a severe shock to the financial community, since the Knickerbocker was the third largest trust company in New York, with deposits of \$62,000,000. The next day a run began on the Trust Company of America, with deposits of \$64,000,000, this run having been mainly the result of an unwise announcement that its affairs had been the subject of a conference of bankers. Other banks came to the assistance of the Trust Company of America and it withstood a run during which it paid out \$34,000,000. Confidence, however, was not restored, and other banks and trust companies had to call for assistance from the stronger members of the banking community.

At the same time that the clearing-house banks were advancing cash to the trust companies, they were being called upon to ship large sums of cash to their correspondents in the interior. The calls from the interior were made more insistent by bank and business failures in various parts of the country, but in the main the impelling cause was distrust of the New York banks—the fear of general suspension of cash payment in New York. This fear was unfortunately fully justified.

Sprague concludes that the suspension of cash payment by the New York banks was unnecessary and inexcusable. These banks as a group failed to exercise a reasonable degree of leadership and co-operation—they did not live up to their responsibilities. In the first place, they did not resort to the issue of clearing-house loan certificates until October 26, when the panic was already well under way and becoming uncontrollable. A more prompt use of clearing-house loan certificates would, for reasons already given, have made it possible for the individual banks to grant new loans more freely and to call old loans less ruthlessly, so that there would have been considerably less forced liquidation of stock-market collateral—liquidation which caused such violent declines on the stock market that complete collapse was prevented only by a \$25,000,000 money pool formed by J. P. Morgan.¹ The second

¹ Father of the present J. P. Morgan.

count against the banks is that they did not pool their reserves. While some of the stronger banks extended aid to the weaker banks, others attempted to strengthen their own cash position and thereby added to the general demoralization. The third count against the New York banks is that they restricted cash payment, and thereby hastened general suspension over the country as a whole while they were still, in the aggregate, very strong in cash reserves. In other words, they refused to use the reserves which they had. Sprague estimates that out of a total reserve of \$256,900,000 held on October 19, the solvent New York banks paid out only \$36,000,000 during the next two weeks, and that they had paid out only \$26,000,000 at the time when cash payments were restricted. The fourth count against the banks is that resumption of cash payment was delayed long after resumption had become possible. Resumption was not complete until the beginning of January, 1908, and for two months cash was regularly bought and sold at a premium in New York.

As for the country banks, as usual in times of banking crises, they strengthened their cash position at the expense of the depository banks in New York and other reserve cities. In December, when the worst of the panic was over, they actually held \$47,600,000 more cash reserves than in August before it began. This increase in their cash reserves is accounted for by the fact that their net deposits with reserve agents declined from \$410,000,000 in August to \$356,000,000 in December, a decline of \$54,000,000.

During the crisis contraction of loans was naturally the order of the day, with the banks all, with a few exceptions, scrambling for reserves, but the total extent of loan contraction was comparatively mild — the reduction for all national banks having amounted to only \$85,000,000, or two per cent, from August 22 to December 3. Contraction by state banks and trust companies was probably greater, since these were in a weaker position than the national banks to begin with because of less stringent cash reserve requirements. In New York City the national banks had actually expanded loans during the period from August to December by \$63,000,000. This was accounted for by the fact that so many loans were called by the trust companies and outside banks that the national banks in New York were compelled to expand loans in some degree to avert complete disaster. The burden of such expansion was thrown mainly upon a few of the more public-spirited banks whose management recognized that financial collapse would be complete if they participated in the general mad scramble for cash reserves.

The New York banks received substantial assistance from the United

States Treasury, which deposited \$36,000,000 in these banks during the latter part of October. This alleviated to some extent the shortage of money resulting from hoarding during the crisis. The shortage of money was further relieved by abnormally large imports of gold during November, amounting to \$96,000,000. The circulating medium was further expanded by the resort to substitutes for money, such as clearing-house loan certificates, used only by banks, and cashiers' checks, pay checks, etc. As was to be expected, little help came during the crisis from expansion in the amount of national bank notes in circulation, although the Treasury encouraged the issue of additional bank notes by offering \$150,000,000 of new government securities to the banks — to be used as the basis of additional note issues. To make the offer attractive, the banks were permitted to retain a large percentage of the amount paid for the securities as a government deposit, so that they could issue a larger amount of new bank notes than the sums they actually paid out for the securities. As a result of this generous offer to the banks, national bank-note currency expanded \$34,000,000, but this increase came tardily in December, and not promptly in time of the greatest need.

CHAPTER XVIII

CENTRAL BANKS

1. FUNCTIONS OF CENTRAL BANKS

IN THE preceding chapter the defects of the National Banking System were discussed in some detail. It was pointed out that this system could not meet the fundamental tests of a good banking system, and it was emphasized that this was so primarily because it was in reality not a banking system at all, but merely an unorganized mass of banks. What was chiefly lacking in the National Banking System was a central bank or bankers' bank, which is an essential part of any good banking system.

In a good banking system the individual banks should remain safe and sound so that failures would be few and never so disastrous as to cause loss to innocent depositors and note-holders. They should at all times be in a position to meet all demands upon them as a legitimate result of their deposit and bank-note liabilities. As for the banking system as a whole, it should permit bank credit to expand in proportion to the expansion in the physical volume of trade, but not so rapidly as to permit and to generate a rising price-level in commodities, real estate, and securities, leading to an orgy of reckless speculation. A good banking system should not generate financial crises by fostering undue expansion and reckless speculation, but should it be compelled, nevertheless, to contend with a crisis, it should be able to meet such an emergency without a violent contraction of credit, calling of loans, forced liquidation of sound assets by normally solvent borrowers, and widespread banking and business failures resulting primarily from temporary inability of the banking system to function.

All this implies that a good banking system should so control bank credit that the price-level in the country in which it operates will tend to remain stable unless acted upon by forces outside the country over which that banking system has no control, such as a world-wide rise in the price-level resulting from an abnormal increase in gold production, or a world-wide fall in prices forced by a general shortage of gold, the standard money. Such a control over the expansion and contraction of bank credit can only be achieved by a powerful central bank clothed with authority by the National Government and supplied with abundant banking resources. It can never be achieved by an unorganized

mass of hundreds or thousands of commercial banks with no recognized leadership. It is the prime function of a central bank to maintain the banking system of which it is the head in a sound and efficient condition, and by keeping the system as a whole sound to help the member banks of the system to conduct a safe yet profitable banking business which, generally speaking, they cannot do without the aid of a central bank, as experience has abundantly shown.

In order that a central bank may properly perform this service of *maintaining the banking system in a safe and sound condition*, it must at all times be in a position to loosen or tighten bank credit as circumstances warrant, to raise or lower discount rates, to check speculation or to encourage buying, and, within limits, to permit a rise in prices or to force a fall. All this implies that the central bank must be primarily a bankers' bank, having relations with the member banks of its system quite similar to the relations existing between a member bank, or ordinary commercial bank, and its customers. For example:

1. It should accept deposits from its member banks, and stand ready at all times to pay these deposits upon demand, either in cash or in its own circulating notes.

2. It should stand ready at all times to extend credit to its member banks in such reasonable amounts as the general banking situation warrants, through discounting the promissory notes of the member banks properly collateralized, through rediscounting for them their own customers' notes, and through purchasing from them bankers' acceptances, trade acceptances, and possibly other forms of short-term prime commercial paper.

3. The credit advanced to the member banks may take the form of the bank notes of the central bank itself, other kinds of money in common circulation, or deposits credited to the account of the member banks on the books of the central bank.

In addition to performing these various services for its member banks, the central bank should have the power to buy and sell government securities, bankers' acceptances, and other forms of short-term commercial paper in the open market — that is, to take the initiative in such transactions, either with member banks or other buyers and sellers, so that it may exercise a direct influence upon credit conditions independently of any action that may be taken by its member banks.

A central bank which has such relations with its member banks as those just enumerated and has also such open-market powers as specified will be in a position, if it has ample resources and maintains itself in a sound condition, to take effective measures to expand bank credit

when expansion is desired, to check expansion when it becomes harmful or dangerous, and to prevent panicky and forced liquidation of loans and investments. It will be in a position, not only to finance a general expansion in business activity, but also to meet those seasonal demands for extra currency experienced in the crop-moving season, holiday periods, financial settlement dates, such as when heavy dividend payments are made or income-tax installments are paid, or at times of temporary unfavorable foreign trade balances. If at such times member banks run short of cash, they need only discount some paper with, or sell an investment to, the central bank. The proceeds thereof may be taken in the form of bank notes of the central bank or other money, and this may be paid out into circulation without causing an equivalent loss of cash to any other commercial bank. If necessary, all banks in the system may at one and the same time obtain such advances from the central bank, provided it has adequate cash reserves, which it may advance to them directly or upon the basis of which it may issue bank notes or extend deposit credit. With a strong central bank there need be no forced calling of loans by member banks scrambling among themselves for cash reserves, since all alike may obtain additional cash from their own bank — the central, or bankers' bank.

The very fact that the member banks have the resources of the central bank at their disposal tends to stimulate confidence in them on the part of their depositors and to give them confidence in their own powers to withstand a run. There are thus less likely to be runs upon the member banks than if no central bank existed, and the member banks are unlikely to draw unnecessarily upon the central bank in an effort to strengthen their own position. The central bank, in consequence, is quite unlikely to be subjected to a heavy run itself, except when heavy unfavorable trade balances or short-term foreign debts involve the necessity of heavy exports of gold. And it may be added that the occasion for heavy exports of gold such as would jeopardize the central bank itself would very rarely arise if the banking system were properly controlled by the central bank.

When the problem of the central bank is that of checking undue expansion of credit rather than expanding credit in time of business activity or financial stress, it may need only to refuse further extension of credit to its member banks. If under these conditions they have expanded up to the limit permitted by their reserve requirements, they must then refuse further extension of credit to their own customers. If the member banks have some excess reserves and consequently excess lending power after expansion of credit, in the opinion of the manage-

ment of the central bank, has become harmful or dangerous, the central bank may resort to open-market operations to bring about contraction of credit. It may, for example, sell some of its holdings of government securities or bankers' acceptances. If it receives payment in its own notes or other money, this will reduce the amount of money in circulation or in the hands of the member banks. If it receives payment in checks drawn on member banks, it may either charge these checks up against the deposit account of such member banks with it, or ask for payment. In either case, the cash reserves of the member banks will be reduced by the amount of such payments — deposits with the central bank being counted as cash by the member banks. By such operations, then, the central bank may create such a shortage of cash in circulation or such a shortage of cash reserves among the member banks as to cause some contraction of credit and consequently some contraction of harmful and dangerous business and speculative loans and investments.

2. DESIRABILITY OF GOVERNMENT CONTROL OF CENTRAL BANKS

If a central bank should be operated primarily for profit rather than primarily for the purpose of keeping the banking system sound, it would tend, like any profit-making commercial bank, to extend credit to the very limit of its resources, and be left eventually to face a credit crisis without any excess reserves or any capacity to expand credit in time of most need. It would under these conditions tend to use the deposits of its member banks, constituting the ultimate cash reserves of the whole banking system, and its own note-issuing power, as the basis of a wild expansion of currency and credit, and thus generate an orgy of inflation and speculation, resulting finally in a great financial panic far worse than any that could be generated without the aid of a centralized agency of inflation. Nowhere in the system, when the crash came, would there be any reserve lending power, and any means whatever of preventing disastrous forced liquidation of loans and investments, with a consequent prolonged period of business prostration.

It is perfectly obvious, therefore, that a central bank, if it is to be a useful institution and not an agent of destruction, must be owned and controlled by wise and public-spirited men, operating their bank in the public interest, and not primarily for profit, or it must be owned or under some measure of control by the National Government. Experience has taught that some measure of government control, but not government ownership, is essential to the proper functioning of such a bank. Along with government control, which limits the profit-making of the bank, must go also some degree of government support, either in the form of

direct financial assistance or in the form of special or exclusive banking privileges conferred upon the bank.

3. THE FIRST AND SECOND BANKS OF THE UNITED STATES

The reader must now be reminded that at almost the very inception of our Government under the Constitution, our country, through the extraordinarily able leadership of Alexander Hamilton, was provided with a central bank — The Bank of the United States. This bank was not only given adequate powers and financial assistance by the Government, but exercised its powers on the whole with such wisdom that, despite the difficult conditions existing during the time under which it operated, it did maintain the banking system of the country in a reasonably sound and efficient condition. But, as we have seen, beset by political enemies aided and abetted by the people's abysmal ignorance of sound economic principles and their preference for unsound banking and inflation, the bank was destroyed after twenty years of service, and the country was left to fall a willing victim to the "bankers on wind" who disgraced the name of banker in the years following the expiration of the bank's charter in 1811.

Brought somewhat to their senses by the financial disasters accompanying the War of 1812, the people attempted to undo the evil wrought by the destruction of the First Bank by establishing in 1816 the Second Bank of the United States, essentially a copy of the First Bank. The early history of the Second Bank showed, however, as related in some detail in an earlier chapter, that a good system will not work well under a bad management, and the Second Bank for a time proved to be more of a liability to the banking system than an asset. But later, under the able management, first of Langdon Cheves and then of Nicholas Biddle, it performed good service as a central bank until, like its predecessor, it fell a victim to political intrigue and gave up the ghost. Then followed the most disgraceful period in American banking history, with banking free from federal control and the bankers on wind and other financial sharpers little hampered by state control. This period of incredibly bad banking came to an end with the Civil War and the establishment of the National Banking System, which, as we have just seen, while in some respects a satisfactory system, had serious defects in important particulars, its outstanding defect being the lack of a central bank.

4. FEAR OF THE MONEY POWER

Between the time of the expiration of the charter of the Second Bank of the United States in 1836 and the establishment of the Federal Re-

serve System in 1914, seventy-eight years elapsed. During this long period we had a banking system without a head, containing within itself no agency to control bank credit with the end in view of preventing reckless inflation and disastrous panics. This could not have been because among the American people there were no leaders who were aware of the evils of a decentralized banking system and of the services that might be performed by a good central bank. The experience of the country under the First and Second Banks of the United States was too recent to be forgotten and on the whole too satisfactory to be disregarded. And even if the history of these banks had been unknown, there was the contemporary experience of England and other foreign countries from which could be learned the advantage of a true banking system over an unorganized mass of banks.

The real reason that no central bank was established in this country during this period of nearly eighty years was the fear of the "money power" which might use the agency of a strong central bank to oppress the people. The hatred and fear felt by the mass of our people of that "monster" the money power — almost as purely a myth as the dragons and ogres of the ancient world — grew primarily out of the fact that they were chronically in debt. Their chronic state of indebtedness grew, not out of poverty, but out of their desire to speculate on the future growth of the country's wealth which they expected to become boundless.

Primarily this speculation took the form in earlier years of purchasing land beyond their means and of borrowing money to pay for it; large-scale speculation in stocks developed later. What the land speculators wanted was some sort of system which would permit them to gain the "unearned increment in land values" without cost. Somewhere, they felt, there should be a source of loans, at low interest rates or at no interest at all, upon which everyone could draw in order to buy land which would inevitably increase in value and could be sold at a profit great enough to repay the loans with interest, if any, and leave a handsome margin of gain for the speculator. The speculation took the form also of carrying on business enterprises in manufacturing and merchandising as well as in agriculture on a scale greater than the capital of the owners warranted and of borrowing a large proportion of the capital required.

Quite naïvely many of the borrowers assumed that lenders should lend at low rates of interest or no interest at all, should forego interest when times were bad, and forgive the debt if prices fell instead of rising. They assumed, in short, that the lenders should be good fellows who would bear all the risks of the speculator's venture, but share little or not at all in his gains. When loans were not forthcoming in good volume

at all times, the insufficiency of funds was blamed upon the money power which was throttling trade. When crises, panics, and depression came, and payment of interest and principal became oppressive or impossible, the money power was believed to be pulling wires behind the screens and wreaking financial havoc for its own devious ends. The money power became such a blood-curdling monster in the imagination of the people that any suggestion that a strong central bank should be established aroused terrific opposition.

There were, of course, many persons who favored sound banking as against unsound banking and some who wanted no banks at all. But they were fewer in number and less influential than those who wanted endless inflation, making debts always easy to pay because repayment might always be made in dollars smaller in purchasing power than the dollars borrowed. Under a wide-open banking system, free from onerous cash reserve restrictions and free from the requirement to pay out cash on demand to depositors and note-holders, banks granted loans freely and inflation was easily brought about. Any tightening-up of the banking laws and restrictions that implied that deposits and bank notes were more than mere book entries or scraps of paper and should be at all times interchangeable with gold or silver money were likely to be regarded with hostility by many bankers and their speculator clients, and to be branded as a manifestation of the money power bent upon monopolizing money and robbing the people.

The National Banking System was more often attacked for *preventing* inflation than for *permitting* inflation. Inflationists were more or less continuously at work in Congress trying to destroy it and to substitute for the sound national bank notes, limited in quantity and amply secured by government bonds, the flexible and expansible form of currency represented by the greenbacks, to be issued by the Government in generous amounts either as loans at nominal rates of interest to speculators or in payment of government expenses in lieu of money collected by the painful process of taxation.

A central bank superimposed upon a National Banking System already too sound for the comfort of inflationists was to be opposed by every adherent of the doctrine that the American business man and farmer have the inalienable right to borrow unlimited amounts of money at a nominal rate of interest to be used for whatever purpose they desire, and that it is the duty of the Government to provide a monetary system that will meet these requirements. With sentiments such as these entertained by a not inconsiderable proportion of the people, even in high quarters, a movement for the establishment of a central bank would naturally

make slow progress. Incidentally, it may be remarked that the establishment finally of a central banking system in 1914 did not cure the American people of the inflation complex, and the first thought of a large number of more or less influential men was to utilize the newly established central banks as engines of inflation, with the disastrous consequences to be noted in later chapters.

5. THE NATIONAL MONETARY COMMISSION

During the later years of the nineteenth century an increasing number of serious students of banking, in Congress, in banking and business circles, and in the colleges and universities, began to promulgate the doctrine that the welfare of the people would be best served by making the banking system better rather than by making it worse, and sentiment favoring some sort of centralized banking system began to grow. The panic of 1907 intensified the interest of such students in banking reform, and the question of a revision of the banking laws became so important as to receive consideration on the front pages of leading newspapers. The first tangible important result of this agitation for reform was the passage in 1908 of the Aldrich-Vreeland Act. This law authorized national banks to organize themselves into national currency associations for the purpose of issuing bank notes secured by certain classes of securities other than government bonds. It was an emergency measure and provided in effect a makeshift substitute for a central bank with note-issue power.

With the details of the operation of this law we need not concern ourselves, since it was essentially temporary in character and of no great importance. Of more lasting importance than the currency provisions of the Aldrich-Vreeland Act was the creation under this law of the National Monetary Commission, composed of members of both houses of Congress, for the purpose of making extensive investigations of our own banking system and of the banking and currency system of the leading countries of the world, and of publishing a report on the results of these investigations. The Commission fortunately employed many notable experts on money and banking, and as a result of the careful work of these experts and hearings held by members of the Commission itself a great mass of valuable information was accumulated and published in forty-odd volumes.

A bare summary of this *Report* would make a volume in itself and no such summary can here be presented. It must suffice to consider briefly the more significant studies of foreign banking systems found in this *Report*, particularly the studies of the banking systems of England,

France, and Germany. It was primarily on the basis of a study of the organization and operation of the banking systems of these three countries that our own Federal Reserve System was constructed. It is not an imitation of any of these three systems, and it has important features found in none of them, but without question the men who wrote the Federal Reserve Act were profoundly influenced by what they had learned concerning the English, French, and German banking systems, and the central banks of these three systems — the Bank of England, the Bank of France, and the Reichsbank. Since this is true, it will serve a useful purpose in helping the reader to understand the nature of our present banking system to describe briefly the development and outstanding characteristics of the English, French, and German banking systems as these systems functioned at the time when the National Monetary Commission made its investigation — in the years shortly preceding the World War. During the World War and the post-war years the banking systems of these three countries were more or less modified and some of the statements made in the following sections relating to the operation of the English, French, and German banking systems would not apply to present conditions. But it was the pre-war systems and not the post-war systems of European countries that influenced our monetary experts and legislators when the Federal Reserve System was fashioned, and the purpose of the following pages, as already indicated, is to show the nature of this influence, and not to give an up-to-the-minute description of foreign banking systems. For this reason the past tense will be used in the description of the operations of the banking systems discussed. In a later chapter more recent developments in the banking systems of England, France, and Germany will be considered in some detail.

6. THE BANK OF ENGLAND

The Bank of England was chartered by Parliament in 1694. The charter required that £1,200,000 should be subscribed by private stockholders as the capital of the bank, and that the whole of this sum should be lent to the Government at 8 per cent per annum. In turn, the bank was given the privilege of issuing its own circulating notes to an amount not exceeding its capital. Beginning thus more than two hundred years ago as a privately owned and governed institution, performing fiscal services for the Government and obtaining in exchange valuable privileges, the Bank of England has had a long, honorable, and highly useful career. Taking into consideration both the time it has been in operation, the average excellence of its management, the banking services it

has performed for the English bankers, the English Government, and the international financial world, it is without question the greatest bank in the world. Space does not permit a more detailed consideration of its history, but it may be noted, in passing, that its capacity to serve and its usefulness in recent decades may be attributed in large measure to the prestige it has achieved from two centuries of able and public-spirited management, and for such prestige there is no substitute. It is something that a new banking system, such as our Federal Reserve System, will lack for generations, no matter how well constructed it may be or how well managed. Such a prestige the First Bank of the United States, if it had been permitted to live, might by this time have achieved — it would now be almost a century and a half old. Such a prestige our Federal Reserve System may have achieved when men born at the time of the World War have reached old age, if during this interval it is not destroyed.

The National Monetary Commission found that the Bank of England served as banker for the British Government. As such it accepted government deposits and made short-term loans to the Government when occasion demanded. Ordinarily such loans or advances were made when the Government's Treasury balances were so low that it was unable otherwise to meet the interest on the public debt and its current expenditures. The bank did not ordinarily make long-term loans to the Government — that is, it did not buy from the Government long-term bonds.

The Bank of England acted also as banker for the rest of the banks and banking institutions of various sorts of England. The commercial banks looked upon their deposits with the Bank of England as cash and as a consequence kept most of their reserves with it. Naturally, the Bank of England, no more than any other privately owned bank, could meet operating expenses if it made no use of its deposits other than holding them as idle cash, and so it was compelled to convert its resources, so far as it could with safety, into earning assets of the various types to be indicated later. Since, however, the Bank of England, through its position as a bankers' bank, became practically the sole custodian of the nation's bank reserves, and assumed the great responsibilities of this trusteeship, it normally maintained a much higher cash reserve ratio than that required of an ordinary commercial bank — the ratio before the war rarely having been permitted to fall under 33 per cent and ordinarily having been maintained at between 40 and 50 per cent.

Not even a reserve ratio as high as 50 per cent, and, in fact, no cash

reserve ratio short of 100 per cent, would guarantee any bank's capacity to pay all deposits in cash upon demand if the demands were made simultaneously by all depositors. But the Bank of England was altogether unlikely to have such a universal demand for cash made upon it. The ordinary method of making payment had long been by check (the English spell it cheque), and a check drawn by one bank on its deposit with the Bank of England would normally find its way into another bank to be deposited in turn with the central bank, so that no cash would be lost by the latter. All that would happen would be two entries in the bank's books, reducing the deposit credit of the one bank and increasing that of the other. Neither would the Bank of England tend to lose cash when making a loan to a bank. The loan would be made in the form of a deposit subject to check. Even if a depositor did demand cash, the payment might be made in the form of the Bank of England's own notes, to be discussed in a later paragraph. Only when, because of operations in international trade or finance, it became necessary for gold to be exported from the country would the Bank of England ordinarily be called upon to make payment in gold and thus suffer a drain upon its cash reserves. To be able at all times to meet such demands for gold payment had been one of the outstanding policies of the bank, and this capacity to make gold payment it maintained at all times up to the World War except for the period during and following the Napoleonic Wars, specifically, from 1797 to 1824.

7. BANK-NOTE ISSUE IN ENGLAND INELASTIC

The Bank of England had been given a practical monopoly of note issue by the Peel Act of 1844. This act was designed to put an end to the reckless issue of bank notes by private banking firms outside the metropolitan district of London. The note-issue privilege had previously been denied to joint-stock banks in and within a radius of sixty-five miles of London. After 1844 no bank other than the Bank of England was to be allowed to increase its note issue, and the Bank of England itself was to be restricted to a note issue of £14,000,000 over and above the amount of its notes that were covered 100 per cent by gold in its vaults. That part of the note issue not covered 100 per cent by gold was referred to as the fiduciary or uncovered issue. The Peel Act made provision, however, for a further possible expansion of the fiduciary issue by two thirds of the amount of the issues allowed to lapse by other banks. Under this provision the issue of fiduciary notes by the Bank of England increased gradually until it reached the figure of £18,450,000 before the World War.

Obviously, under this law England had anything but an elastic bank-note issue. The issue was limited by the amount of gold in the vaults of the Bank of England plus the fixed fiduciary issue. In times of crisis, when the Bank of England would be called upon to extend additional credit to banks in distress, it could not legally do so through the issue of bank notes, regardless of the size of its gold reserve. However, in three periods of crisis, in 1847, 1857, and 1866, Parliament suspended the Bank Act and permitted the Bank of England to issue an unlimited amount of fiduciary notes. In each of these periods of financial stress the mere grant of authority to the bank to issue notes without limit was sufficient to allay the panic. When all solvent banks were assured of an unrestricted supply of funds, the scramble for cash subsided and no great amount of notes was actually required.

What elasticity of note issue there was in the English banking system before the World War was therefore of the spasmodic type. There was no provision for a gradual expansion to meet the growing needs of trade or seasonal requirements, and the sharp increase in demand that might be expected in times of financial panic could be met only by special Act of Parliament. Practically speaking, the bank-note issue of England represented for the most part nothing but gold certificates placed in circulation, not by the Government, as our gold certificates are, but by the Bank of England, and the issue would tend to expand and contract only with the importation and the exportation of gold, except in times of panic when the restriction on the fiduciary issue might be removed by Parliament. The English had a wholesome fear of the danger of inflation by the bank-note route, and their banking system was probably none the worse because of this fear.

It was held by English writers before the war that elasticity of bank-note issue was a matter of little consequence in a banking system where most payments were made by check. The deposit currency in which payments were made was extremely elastic, swelling with the demands of business and contracting when business needs grew less. This argument against the need of an elastic bank-note issue leaves out of account the fact that, even when most payments are made by check, a more or less fixed proportion of all payments tends to be made in cash. Consequently, an expansion in trade involving larger payments by check involves also larger payments in cash, and if the cash is not forthcoming in the form of additional bank notes, it must come from the gold or other lawful money reserves of the banks. Hence expansion of bank deposits and payments by check tend to reduce the cash reserve ratios of the banks by the double process of increasing both the deposits, or denom-

inator of the ratio, and reducing the cash reserve, or the numerator of the ratio. It follows that inelasticity of bank-note issue tends to reduce the elasticity of deposit currency. If, therefore, a high degree of elasticity is desired in bank credit, it is necessary to have some measure of elasticity in note issue as well as in deposits. Whether or not a high degree of elasticity is desirable is another question, the answer to which cannot definitely be given without qualification. It has the disadvantage of permitting reckless inflation if the banking system is mismanaged, but it has the advantage of staving off absolute collapse in time of panic. The English, muddling delightfully through, managed to gain the advantages of elasticity of note issue without its disadvantages by injecting it into the banking system only in time of crises when it was most needed. When we come to consider the experience of the United States under the Federal Reserve System, we shall have occasion to wonder if possibly we might have learned more than we did from the English system.

8. ELASTIC BANK-DEPOSIT CURRENCY

While the English system did not embrace an elastic bank-note issue, there was, as already indicated, an elastic bank-deposit currency which could be enormously expanded through the operations of the Bank of England despite its inability in normal times to issue additional bank notes not secured 100 per cent by gold. With deposits of other banks in the Bank of England generally regarded as the equivalent of cash reserve, the cash reserves of the commercial banks could be increased by the simple process of selling securities, discounting commercial paper of various sorts, or obtaining loans at the Bank of England — the proceeds of these operations being credited to the deposit account of the discounting or borrowing banks. The only limitation upon such expansion, aside from the amount of eligible paper or securities in the hands of the commercial banks, was the reserve ratio of the Bank of England itself, which it ordinarily maintained as already indicated at a level of 33 per cent or higher, but which it was not legally obliged to maintain at any such figure, legal minimum cash reserve requirements having been considered unnecessary in England. Since the amount of discountable paper and securities available as collateral for loans increased with business activity, the only real limitation upon bank-credit expansion in England was the cash reserve position of the central bank itself.

Far from lacking sufficient capacity for expansion because of the lack of an elastic bank-note issue, there is good reason to believe that the English banking system suffered from too great a degree of elasticity. English speculative orgies based on expansion of bank credit have been

factors in precipitating more than one financial panic with world-wide ramifications.

The failure of the English banking system to prevent disastrous periods of inflation might well have been taken into consideration by the framers of the Federal Reserve Act, to the end that the law which they drafted should have made credit inflation more difficult, and not less difficult, than under the English system. But when our Federal Reserve System was established, there apparently existed no fear in responsible quarters that it might be utilized as a dangerous engine of inflation, so it was given that double degree of elasticity of credit which comes from an elastic or expansive bank-note issue superimposed upon centralized reserves, and thus endowed with a much greater capacity for generating inflation than the English banking system.¹

9. THE ENGLISH JOINT-STOCK BANKS

The second part of the English banking system to be noted is the group of joint-stock banks, so-called to distinguish them from the less important private banks carrying on similar banking operations. In this connection a striking difference between the commercial banking system of England and our own banking system before the war requires attention. Whereas our banking system in 1913 embraced 7473 individual national banks, and 15,526 state banks and trust companies, most of which were small, and few of which had any branches, the number of joint-stock banks in England and Wales had by 1913 been reduced through amalgamations to 43, and these 43 banks had 5797 branches,² the branches for the most part offering banking services throughout the counties which had formerly been performed by independent small banks absorbed by the large banks. In passing, it may be noted that since 1913 the process of amalgamation into fewer and larger institutions has proceeded much farther, until most of the commercial banking in England and Wales is in the hands of five large joint-stock banks and their branches.

The chief functions of the joint-stock banks were to accept deposits and to make loans, either directly through advances to their customers or indirectly through the process of discounting or purchasing short-term commercial paper of various types. Direct advances to customers were made in the form of an ordinary loan as in the United States, or in the

¹ The expansive note-issue provision was not inserted without opposition. Elhu Root, for example, made an extremely vigorous attack upon it as a ready instrument of tremendous inflation. See *Commercial and Financial Chronicle*, November 26, 1932, pp 3583-85.

² Willis and Beekhart, *Foreign Banking Systems*, p. 1163. Henry Holt and Company.

form of an "overdraft" on the customer's checking account. The overdraft form of loan was commonly used. Just as in the case of any other commercial banks, deposits in the joint-stock banks might be created by depositing with them cash or checks drawn on other banks, or as the result of a direct loan from the banks in the form of a deposit subject to check, or as the result of a sale to them of commercial paper or securities. Against these deposits, in whatever manner created, depositors might draw checks, and such checks were used before the war to settle practically all commercial and financial transactions. Bank of England notes and metallic money were little used, and the joint-stock banks, therefore, provided the country with practically all of its currency.

This check currency provided by the joint-stock banks was, as already indicated, extremely elastic and easily subject to inflation, since there was no legal requirement in respect to minimum cash reserves against deposits. The banks could accept deposits and make loans in the form of deposits or otherwise without restraint, other than that imposed by prudent management. Naturally, expansion of loans, whether in the form of cash, Bank of England notes, or deposits subject to check, as well as the purchase of bank acceptances or other forms of commercial paper or securities, tended to reduce the reserve ratio of the expanding banks. But through their relations with the Bank of England the joint-stock banks might always increase their reserves — in the form of deposits with the Bank of England — and so the final limitation on currency expansion was represented by the cash reserve position of the central bank.

10. DISCOUNT HOUSES AND BILL-BROKERS

The joint-stock banks, while replenishing their cash reserves through building up their accounts with the Bank of England, did not do this ordinarily by direct loans from that institution, but rather indirectly through their operations with the discount houses and bill-brokers. The discount houses and bill-brokers were specialists in buying bankers' acceptances, trade acceptances, and short-term bills of exchange. These acceptances and bills they either held to maturity or sold to the joint-stock banks or others, whichever they found the most profitable under given conditions of the money market. To help finance these operations the discount houses and bill-brokers borrowed at call or on short notice from the joint-stock banks, their profit arising from the difference between the rate paid to the banks on loans and the rate at which they themselves discounted bills and acceptances.

Whenever the joint-stock banks found themselves short of cash and

their reserve ratio uncomfortably low, they would call in the loans from the discount houses and bill-brokers. The latter, when pressed for cash in this manner, would borrow from the Bank of England, which, of course, demanded adequate security, such as represented by the bills of exchange in the portfolio of the discount houses. Against these loans granted them by the central bank, in the form of deposits subject to check, the discount houses and bill-brokers might draw checks to liquidate their loans from the joint-stock banks. These checks the joint-stock banks might then deposit to their account with the Bank of England, and thus increase their "cash" reserve.

11. PROTECTING THE BANK OF ENGLAND'S RESERVE RATIO

Naturally, this increase in deposits credited to the account of the joint-stock banks by the Bank of England would tend to reduce its own reserve ratio, and this reserve ratio was, as previously stated, the only brake upon credit expansion in the whole system. So long as this reserve was not too badly impaired, the bank might continue expanding its loans to the discount houses, thus permitting the joint-stock banks to maintain their reserves in the face of expanding loans and deposits. The expansion of loans tended to increase the quantity of bills available for discounting, and the larger quantity of bills tended to increase deposits and loans.

When, however, the Bank of England found its cash reserve position impaired, a halt had to be called on expansion. The bank's reserve ratio, like that of any other bank, might be reduced either by expansion of deposits or loss of gold. Expansion of note issue could not reduce its reserve ratio except when the Bank Act was suspended or when the bank held gold in excess of the amount of its notes outstanding, since additional note issues were required to be covered 100 per cent by gold.

Reduction in its reserve ratio resulting from expansion of its own deposits the bank could prevent by the simple process of refusing to grant further loans in the form of deposits subject to check, by refusing to renew maturing loans, by refraining from further discounting of bills and purchasing of securities. Or it could use the less drastic method of discouraging loans and discounts by raising its rate of discount as a means of checking the expansion of its deposit liabilities.

Reduction of its cash reserve ratio through withdrawal of gold from the bank presented a somewhat different problem. The bank was committed to the policy of maintaining the gold standard, and did so by standing always ready to buy gold at the rate of £3, 17s., 9d. per troy ounce, eleven-twelfths fine, and to sell gold at the fixed rate of £3, 17s.,

10.5*d.* per ounce to all comers. Depositors might withdraw gold from the bank with a charge at this rate against their accounts. Gold, however, was ordinarily little demanded for domestic transactions, but usually only to settle balances in international trade. When the balance of international payments was against England, and the demand for foreign exchange exceeded the supply, and the rates on foreign countries rose above the gold export point, bankers found it cheaper to buy gold from the Bank of England than to buy bills of exchange. Thus, an external drain on the bank's gold reserve would develop and would tend to continue as long as the rates of foreign exchange remained above the gold export point. On the other hand, when foreign exchange rates fell below the gold import point because the balance of international payments was in favor of England, and the supply of foreign exchange exceeded the demand at a higher rate, bankers could import gold at a profit, and this gold tended to be deposited to their account in the Bank of England.

The inflow and outflow of gold being conditioned thus upon the rate of foreign exchange, the Bank of England undertook to protect or build up its gold reserve by controlling the rate of exchange. This it was able to do by influencing the demand and supply of exchange through the bank rate. To understand how the bank managed this, it is necessary to consider the fact that the discount rate of the bank and the market discount rate varied. The "bank rate" was the official rate at which the bank stood ready to discount for all comers, other than its private customers. The rate was fixed once a week, and remained unchanged for a week except under unusual circumstances. The market rate was the rate at which the joint-stock banks, as well as the Bank of England, discounted bills for their own customers. When money was tight and the joint-stock banks and discount houses were depending upon the Bank of England for accommodation, the market rate tended to rise with the bank rate, and the bank could force up the market rate merely by raising the bank rate.

When, however, funds were abundant, and neither the joint-stock banks nor the discount houses were depending upon the bank for loans or discounts, raising the bank rate was not effective in raising the market rate. The joint-stock banks and other financial institutions would continue to lend or discount at the market rate below the Bank of England rate. Under these circumstances the bank entered the money-market as a borrower of funds, received the proceeds of such loans in the form of checks drawn on the joint-stock banks, charged these checks against their accounts with it, and thus reduced their "cash" reserve in the bank. This compelled them to borrow directly from the bank on its

own terms, or to call loans on the discount houses, which then had to borrow from the bank at the bank rate. Thus the bank rate was made the effective market rate.

How a rise in the market rate of discount tends to increase the supply of exchange and to reduce the demand need not be explained here in detail. The reader will recall that this subject has been discussed in our chapter on Foreign Exchange. It will suffice to say that when the London market rate of discount is raised and the supply of exchange thereby increased while the demand for exchange is diminished, the rate of exchange in London on foreign countries falls, and if it has been at the gold export point will tend to continue to fall if the pressure continues to be exerted, until it falls below the gold import point. Gold ceases to flow out and presently begins to flow in. By the measures here briefly described and by the application of these fundamental principles of foreign exchange, the Bank of England was enabled to control the gold reserve — restricting exports of gold and inducing imports whenever, in the judgment of its management, such action was in the public interest. By the same token, it could, of course, encourage exports of gold and discourage imports — in this case reducing the bank rate, thus encouraging expansion of bank credit, and tending to bring about an increase in the demand for foreign exchange in London and a decrease in the supply. Incidentally, it may be added that the same measures which checked an external drain of gold — increasing the rate of discount, checking expansion of credit, and thus bringing pressure to bear upon business men to sell more freely and buy less freely — tended to check also any internal drain of the bank's reserve resulting from inflation which might have been under way, and to replace an outflow of the bank's cash by an inflow.

12. MERCHANT BANKERS AND ACCEPTING HOUSES

This brief description of the English banking system may be closed with a few words about merchant bankers and accepting houses and the use of the bank acceptance. The reader will recall that a trade acceptance is a draft or bill of exchange drawn on a buyer by a seller ordering the former to pay to the latter a specified sum of money at a specified time, and accepted by the buyer. Such a bill is negotiable, but its salability depends in large measure upon the financial standing of the acceptor, even though the drawer of the bill may be held responsible for payment if the acceptor refuses to pay.

Now, certain old established merchants in England, with a broad knowledge of business conditions and business men, and themselves

widely known as reputable merchants, conceived the notion long ago of supplementing their regular business by accepting, for a commission, the bills of other traders. As this part of their business expanded, the firms became known as "accepting houses," and their bills established a reputation for soundness and were eagerly purchased by the joint-stock banks at a low rate of discount, directly from the acceptors or from the discount houses and bill-brokers. Later, joint-stock banks began to accept bills on their own account, and thus entered into competition with the older accepting houses. Thus acceptances — drafts accepted by banks or accepting houses — became an established and useful part of the English money market. Since not only domestic but also foreign bills were accepted, acceptances played an important part in the development of British foreign trade, and in establishing London — where foreign bills would be more readily accepted than anywhere else in the world — as the financial center of the world. It must be added that not only did such acceptances represent a great convenience to buyers and sellers in financing foreign trade, but they represented also a highly desirable form of short-term commercial paper which could be carried by the banks as the most liquid type of secondary reserve, and which always afforded a ready avenue of investment for surplus idle funds.

13. CONCLUSIONS

From its study of the English banking system the National Monetary Commission learned something of the importance of a central bank acting as a bankers' bank; something of the importance of a pooling of bank reserves in the central bank and of the desirability of an expansion of credit, rather than contraction, in time of crisis; something of a centralized control over the discount rate and over imports and exports of gold; something of the value of a broad acceptance market both in the interest of foreign trade and in the interest of flexibility in the domestic money market. But it learned nothing about minimum legal cash reserve requirements for either the central bank or the member banks of the system, except for the limitation placed upon the issue of bank notes. And in connection with bank notes it learned nothing about the advisability of having bank notes issued by the member banks of the system, and nothing about the issue of bank notes by the central bank without limit other than a *minimum* gold reserve of 40 per cent of the amount of notes issued. In our chapters on the Federal Reserve System we shall have occasion to note what use the framers of the Federal Reserve Act made of the information at their disposal concerning the structure and functions of the English banking system.

14. THE BANK OF FRANCE

The Bank of France, like the Bank of England, is a central bank, or bankers' bank, but with important differences in its government, the scope of its operations, and its methods of control over the monetary system of the country. Whereas the governor and the deputy governor of the Bank of England are elected by the board of directors chosen by the stockholders, the governor of the Bank of France and the two sub-governors are appointed by the State. The National Government also appoints the managers of the numerous branches of the bank. The bank is thus, at least in form, more intimately related to the National Government than is the Bank of England.

Essentially, in 1914, when our Federal Reserve System was established, the French banking system consisted of the Bank of France with more than two hundred branches and auxiliary offices; a few great credit establishments with about two thousand branches, and approximately one thousand smaller banks, some of which also had branches. Of the great credit institutions, doing a commercial and investment banking business, four or five overshadowed in importance all the rest.

The services performed by the Bank of France before the war may be briefly described as follows:

It acted as a banker for the State, making loans to the Government, collecting drafts, and transferring funds from one part of the country to another. It was required by law to maintain at least one branch in every department in France, and through these branches, thus established under compulsion and others established voluntarily, it offered to the public a convenient means of transfer of funds. It discounted for the general public both at its main office in Paris and at the branch offices, and maintained rates as low at the branches as at the main office, thus tending to equalize discount rates for the same grade of paper all over France. It discounted and rediscounted for the large credit institutions, and thus permitted the latter to maintain a liquid condition. Most of its discounts were for these other banks rather than for other customers.

The Bank of France had been given a monopoly of bank-note issue in 1848, which it has since retained. Since in France the use of checks had not developed to nearly the same extent as in the United States and England, *bank notes represented a more important form of currency* and were used in a much larger proportion of commercial and financial transactions than in either the United States or England. The law required no minimum legal cash reserve against the bank notes, and while it fixed a maximum limit beyond which notes could not be issued,

this limit could easily be raised in time of emergency, so that, in effect, no actual limit was imposed by law. The security of the notes depended, therefore, almost wholly upon the prudence and ability of the bank's management. It was the established policy of the bank to keep a very high specie reserve against all demand liabilities — notes and deposits combined — a reserve ratio in excess of 60 per cent having been the pre-war normal. This high reserve ratio was maintained to the end that the bank might always be in a position to assist the Government or the large commercial banks in time of stress, and in general to preserve the financial stability of the country.

15. THE PREMIUM ON GOLD

The Bank of France, like the Bank of England, undertook to control the import and export of gold, but, by reason of a peculiarity in the French monetary system, it was enabled to use an expedient other than that of raising the discount rate to check the outflow of gold. As a relic of the bimetallic régime in France the silver five-franc piece, like the silver dollar of about the same value in the United States, had retained its legal-tender power, although its coinage had been restricted to government account. The Bank of France retained among its cash reserves a considerable quantity of these silver coins. It had the option, therefore, of meeting demands for payments of cash by the tender of either silver or gold. In practice it did not refuse payment in gold, but upon occasion it offered the gold only at a premium. This, in effect, raised the gold export point. When the premium on gold was charged, the gold export point was in excess of the par of exchange, not only by the amount of the cost of shipment, but in addition by the amount of the premium. To the extent that the premium on gold prevented the export of gold, it removed one of the correctives of exchange; the export of gold and the consequent monetary and credit stringency which otherwise would have tended to cause a fall in prices and a decline in the rate of exchange failed to operate. But there still remained in operation the high cost of exchange which tended to discourage imports and to encourage exports and thus tended to keep exchange from rising further, even though it did not tend directly to bring down the rate.

This method of restricting the outflow of gold was favored by the mercantile community because it did not create so much disturbance in the money markets as the English method of raising the bank rate and forcing up the market rate of discount, and it has been commended as an excellent device by some writers on money and banking. Nevertheless, it represented nothing less than a slight departure from the gold

standard, and could not have been effective in correcting an unsound expansion of credit leading to heavy demands for gold for export. Obviously, if the demand for gold had become keen enough to induce payment of the premium, then only raising the premium would have prevented gold exports, and thus two prices — diverging, perhaps, far from one another — would have been established for commodities, gold prices on the one hand and silver or paper prices on the other. Such a condition would have resembled the greenback period in American history, when gold also could be had at a premium, but when prices were ordinarily quoted in greenback currency. It would seem that the Bank of France was to be commended for maintaining a sound specie reserve, and thus of necessity restricting unsound credit expansion, rather than for using a means of restricting exports of gold which would have become unsound and dangerous under conditions of inflation. It may be added that the Bank of France, while discouraging exports of gold by others, did not hesitate to export large quantities of gold itself in times of international credit crises, when in the judgment of the management the gold could be more effectively used abroad than at home.

16. THE GREAT BANKS OF FRANCE

The "great credit establishments," or banks, of France, with their hundreds of branches, solicited deposits on which they paid low rates of interest. These deposit accounts were of two types — inactive accounts of persons not engaged in business and the active accounts of business concerns. The lending or investment side of the business of these large banks consisted primarily of discounting short-term commercial paper for French business men. They also bought short-term French treasury bonds, foreign bills of exchange, and stocks and bonds, and they made loans on stock-exchange collateral. They functioned, too, as investment bankers in floating new bond issues, particularly bond issues of foreign governments, which they induced French investors to buy in enormous quantities, sometimes with disastrous results and international political repercussions. But they did not participate extensively in the issue of shares of stocks. Flotation of corporate shares was left mainly to banks of the purely investment banker type, operating largely on their own capital rather than on funds representing deposits of the public.

In all their operations the great banks of France were free from government control and inspection, not even being called upon to submit to the Government intelligible financial statements. As a consequence, there was a paucity of exact information about French banking con-

ditions, such as, for example, the information published by our own Comptroller of the Currency under the National Banking System or by the Federal Reserve Board under the Federal Reserve System at the present time. There having been no legal minimum cash reserve requirements, the banks maintained only such reserves as prudence dictated. Because the great banks could always rediscount good paper at the Bank of France in case of need, they considered the good commercial paper in their portfolios in the light of cash and maintained only small actual cash reserves. The requirement of the Bank of France for rediscounting paper was that it should be three-name paper, or two-name paper with collateral security. A bill of exchange, accepted by the drawee and endorsed by a bank, represented an example of such three-name paper.

17. THE SMALL BANKS OF FRANCE

The small banks of France, in 1913, were being hard-pressed in their competition with the branches of the Bank of France and those of the great banks, which were constantly increasing in number. Competition with the more powerful banks had forced the local banks to specialize largely in granting medium and long-term loans to local industries, loans which would have been risky for the branches of the large banks on account of their lack of exact knowledge of local conditions. The financing of local industries often took the form of the flotation of security issues of these enterprises by the local banks, but these banks also took part in floating other than local securities. The nature of their activities made the assets of the small banks less liquid than those of the large banks. But in the recognition of this fact they operated with a larger proportion of capital and reserves and with a smaller proportion of demand liabilities than the large banks.

18. CONCLUSIONS

This brief description of the French banking system as it was when the National Monetary Commission made its study indicates that the system was highly centralized with a strong and conservatively managed central bank. The Bank of France had a large measure of control over the discount rate and credit expansion by its close banking relation with the great banks and by its power to discount paper in the open market, and it could control the international flow of gold, not only by its control over the discount rate, but also by the special device of the premium on gold. While there were no minimum cash reserve requirements in respect to bank deposits for either the central bank or the other banks,

CENTRAL BANKS

the danger of inflation through undue expansion of deposit currency was minimized by the tendency of the French people to use bank notes rather than checks for making payment. Inflation by means of bank notes was guarded against by giving the Bank of France the monopoly of note issue and placing a legal limit on the quantity that could be issued. While this limit tended to be flexible and was raised on occasion, nevertheless, the custom of the Bank of France was to maintain a very high cash reserve against both notes and deposits, and consequently inflation of the currency was likely to occur only in times of national emergency, as during and after the World War.

The management of the Bank of France in normal times was inclined to the view that the main purpose of the bank was to restrain credit expansion when it becomes unwise rather than to encourage it, and to keep the banking system as a whole in a safe and sound condition — to remain in the background as far as possible except in time of stress, and then to be in a position to act effectively in checking the development of panic. The Bank of France did not adopt the view that the purpose of a central bank is to act as an engine of inflation and to resort to the maximum amount of credit inflation with the minimum amount of cash reserves.

The National Monetary Commission might have noted, in France as in England, that branch banking was highly developed, and that great banks with hundreds of branches could perform very useful services beyond the capacity of small local banks inadequately supplied with capital and managing ability.

19. THE REICHSBANK

The chief constituents of the German banking system at the time the National Monetary Commission made its investigation were the Reichsbank, the joint-stock credit banks, and the agricultural credit and mortgage banks. In this brief discussion of the German banking system we may leave out of consideration the agricultural banks, co-operative in nature, and the mortgage banks, and concentrate our attention upon the outstanding characteristics of the commercial banking system as represented by the Reichsbank and the joint-stock credit banks.

The Reichsbank, as such, came into existence in 1875. But its history goes back to 1765 when Frederick the Great established a state bank called the Koenigliche Bank in Berlin. This bank was transformed into the Preussische Bank in 1846, and the latter in turn was converted into the Reichsbank by imperial law in 1875. Although privately owned,

THE REICHSBANK

the Reichsbank before the World War was completely under government control. The members of its board of directors were appointed by the Emperor, and the general management of the bank was entrusted to the Chancellor of the Reich. The stockholders were recognized to the extent that they were permitted to elect a commission of fifteen members who were authorized to attend directors' meetings, but only with advisory powers.

The law of 1875 gave the Reichsbank a monopoly of future note issues, but did not at once prohibit the circulation of the notes of the thirty-two note-issuing banks then in operation. Provision was made, however, for the Reichsbank to absorb the note issues of the independent banks whenever the latter relinquished their note-issue privilege. By 1906 only four of these banks retained their note-issue privilege, and the monopoly of the central bank was practically complete, since the other note-issuing banks could neither increase their comparatively small issue of notes nor pay out freely the notes of one another.

Of particular interest in its relation to the note-issue provisions of our Federal Reserve System were the restrictions laid upon the quantity of notes that might be issued by the Reichsbank. Briefly stated, the law provided for a tax of five per cent a year on all notes issued in excess of a stated maximum. This maximum was to be calculated by adding to the cash reserve of the bank the "tax-free note contingent," which was fixed at first at 250,000,000 marks for the Reichsbank, but later increased until by 1910 it was fixed at 750,000,000 marks. In addition to this restriction there was the further requirement that the note issue should not exceed three times the cash reserve and that the note circulation in excess of cash reserve should be covered by commercial paper with at least two names and maturing within ninety days. The significance of these note-issue provisions was that they were designed to place a brake upon note expansion, so that it might not become dangerous, and yet permit some degree of expansion for emergencies without resorting to such an awkward expedient as suspension of the Bank Act, as in the case of the Bank of England. The virtue of the five per cent tax was that it was high enough to make note issues subject to it unprofitable except in time of stress, so that notes would not be issued beyond the taxable limit except in time of stress, and any notes so issued would tend to be quickly retired when the emergency was over. Since Germany before the World War had not developed the extensive use of bank-check currency, the limits placed upon expansion of bank notes represented strong safeguards against bank-currency inflation. Aside from its note-issue function whereby the Reichsbank supplied

the Empire with an important part of its currency, its chief functions were to act as fiscal agent for the Imperial Government and the Governments of the German States; to act as a bankers' bank for the joint-stock credit banks; to conduct through its main office and its hundreds of branches a general banking business for the public at large; and finally, to serve as the custodian of the gold supply of the country and stabilizer of the whole financial system. In respect to the national gold supply, this depended, of course, upon the net import or export of gold which in turn depended upon the international trade balance. Through its power over the discount rate the Reichsbank could and did encourage gold imports and discourage gold exports when circumstances warranted such action, in a manner similar to that employed by the Bank of England. It further facilitated gold imports at times by means of interest-free advances to gold importers — to that extent reducing the cost of importation. In effect, it thus raised the gold import point to encourage imports, just as the Bank of France raised the gold export point by the gold premium to discourage gold exports.

From 1888 to 1907 the Reichsbank maintained cash reserves against note issues considerably in excess of the legal minimum of 33 per cent — but the trend was downward. At the close of the year 1888 the reserve ratio was 80.1 per cent, from which point it worked steadily downward, with some interruptions, until it reached a low of 40.6 per cent at the close of the year 1906. Similarly, there was a downward trend of the ratio of its cash to notes and deposits combined, the decline in the ratio running from 67.7 per cent at the close of 1888 to 29.6 per cent at the close of 1906. During this same period, 1888 to 1907, the maximum amount of uncovered note circulation was issued in 1907, when the uncovered issue reached the figure of 1,098,805,000 marks. The elasticity of the note issue is attested by the fact that the difference between the minimum and the maximum amounts of the uncovered note circulation in each year from 1897 to 1907, inclusive, exceeded 500,000,000 marks, and that practically all the uncovered notes tended to be retired shortly after being issued. In other words, the note issue of the Reichsbank was truly elastic, having the quality of contraction as well as the power of expansion.

20. THE JOINT-STOCK CREDIT BANKS OF GERMANY

As for the joint-stock credit banks — corresponding to our ordinary commercial banks, but engaging more largely in investment banking operations than did our commercial banks — these in 1907 numbered 421, with 1064 branches. Overshadowing the other credit banks in

THE "GIRO" SYSTEM

importance were the eight great credit banks of Berlin with 95 branches, and controlling with their affiliated banks about 74 per cent of the entire capital of all the 421 banks. The great credit banks of Berlin, the "Grossbanken," were noted before the war for their close relation with great industrial concerns, serving these concerns in the capacity both of investment bankers, and commercial banks, providing them with their fixed capital in the first instance and with working capital through ordinary commercial banking operations. The Grossbanken, in fact, acted not only as investment bankers, but actually as promoters of industrial corporations. They formed stock companies, providing them with shares and bonds, and temporarily supplied them with funds out of the banks' own resources, until such time as the shares and bonds could be sold to the outside investing public. Some of the interest of the concerns became more or less permanent. Because of the interest of the banks in the great industrial concerns which they thus helped float and finance, they obtained representation on the boards of directors of the latter, and the industrial concerns in turn were represented on the boards of the banks.

American experience has indicated that this mixture of the function of the promoter, the investment banker, and the commercial bank is dangerous, and likely to result in unsound commercial banking, bank failures, and shameless stock-jobbing. In Germany, however, it worked remarkably well, although there were some disturbing episodes from time to time, resulting in heavy losses to investors and depositors.

21. THE "GIRO" SYSTEM

Reference has already been made to the fact that in Germany the use of the ordinary bank check had not become common before the war, as in the United States and England. One reason for this was the fact that a smaller proportion of the people of Germany had bank deposits against which to check. Another reason was the lack of a unified economic development in Germany prior to the organization of the Empire.

As a substitute for the check system the Germans had developed the "giro" system. By the giro system sums may be transferred from the account of one person in a given bank to the account of another person in the same bank. The giro system differs from the check system primarily in the fact that under the giro system the payer and the payee must have deposits in the same bank. A non-depositor may make use of the giro transfer, however, by paying cash into the bank at the time of transfer, in which case, however, a fee may be charged for the service. When a bank has numerous branches in different parts of the country,

the giro system may be used as a means of transferring funds from one part of the country to another. The Reichsbank, for example, with nearly five hundred branches, offered its customers such a transfer service — funds being transferred from any branch to any other — under certain conditions, free of charge. In the place of the check, circulating as a medium of exchange, the Germans made some use of the bill of exchange — representing the promise of a buyer to pay the seller a specified sum of money at a specified future date. Properly endorsed, such bills were negotiable and were passed from hand to hand as so much currency. Obviously, they were inferior to bank checks because they represented a promise to pay at some future time and not upon demand, and for all except the first user they were inconvenient in respect to denomination.

22. CONCLUSIONS

It would appear that the most useful suggestion that the National Monetary Commission might have received from its study of the German banking system related to limitations on the note issue of the central bank. In this respect the German law seems to have been superior to the laws of both England and France. The limitation placed upon the note issue of the Reichsbank was not absolute, but elastic in the true sense in which a rubber band is elastic. Up to a certain point, measured by the bank's cash reserve plus the untaxed contingent, the note issue could expand without restriction and with no special pressure being applied. Beyond this point pressure for expansion had to be strong enough to overcome the 5 per cent annual tax, and just as soon as this pressure was removed, the 5 per cent tax would draw the circulation back again to the untaxed limit. It should be noted particularly that the limit of the untaxed issue rose only mark for mark with the cash reserve, and not as a multiple of the cash reserve, as would have been the case if the only limitation had been a 33 per cent cash reserve ratio. Heavy imports of gold could not thus facilitate a multiple expansion of the note issue, nor would exports of gold force a multiple contraction, except when expansion had proceeded to the point where the note issue approached the limit of three times the total cash reserves. One may conclude that the Reichsbank was designed, not to serve as an engine of inflation in normal times, but as a stabilizer and safety device for the German banking system at all times. As such it worked well until the financial upheaval of the World War which destroyed the soundness of the banking system of Germany as well as of the systems of England and France and of most other countries in the world.

Unfortunately, as we shall see in later chapters, the American banking community was more impressed with the German combination of commercial banking, investment banking, and promotion of new companies, with the opportunity thus presented of stock-jobbing, than with the ingenious restriction on bank-note inflation devised by the German lawmakers. It was the former which our bankers adopted and the latter which our lawmakers, doubtless with the approval of our bankers, rejected. There can be little doubt but that the contrary course would have saved our country a great deal of financial trouble.

CHAPTER XIX

STRUCTURE OF THE FEDERAL RESERVE SYSTEM

1. POLITICAL BACKGROUND OF THE FEDERAL RESERVE ACT

IN THE huge *Report of the National Monetary Commission* submitted to Congress in 1912 was included a summary of the defects of the existing banking system and a plan for a new system designed to correct the enumerated defects of the old. The substance of this plan was embodied in a bill which was introduced into the Senate by Senator Aldrich, Chairman of the National Monetary Commission. Partly because the political upset of 1912 deprived the party of Senator Aldrich of power, and partly because the National Monetary Commission plan became unpopular in consequence of its big banker support, the Aldrich Bill, providing for the establishment of a central banking system headed by a central bank to be called "The National Reserve Association," failed to become a law. But the project of banking reform was not dropped, and under the Democratic Administration which came into full power in March, 1913, a new bill, the Federal Reserve Act, providing for a central banking system, was successfully piloted through Congress by Representative Carter Glass with the powerful support of President Wilson.

With the details of the Aldrich Bill that failed to pass and with the controversy as to what extent the Federal Reserve Act, sponsored by Carter Glass and supported by President Wilson, drew its provisions from the Aldrich Bill, we need not concern ourselves particularly. We are interested primarily in noting to what extent the Federal Reserve System in structure and function represented an improvement over the defective banking system it displaced.

It was to be expected, of course, that the framers of the Federal Reserve Act would be guided in large measure by the expert studies made of the virtues of the leading banking systems of Europe and of the defects of our own, and that there would then be many points of similarity between their bill and the Aldrich Bill framed on the basis of the same information with the same general purpose in view of improving the banking system. On the other hand, the leaders of the Democratic Party, avowedly the party of the people as opposed to the special interests of Wall Street, might be expected to build a banking system less clearly dominated by big bankers and more subject to the will of the people than a banking system devised by Senator Aldrich with the

advice and consent of Wall Street. Taking into consideration the fears of the money power harbored in certain quarters of the Democratic Party — Bryan was still an influential figure — it was to be expected that the new system would be so devised as to exercise a considerable degree of restraint over big banking interests even though it did not exclude them absolutely from power. Moreover, it was to be expected that, while the new system would place much power in the hands of public officials in order properly to hobble the bankers, it would avoid such complete centralization of power in Washington as to do violence to the ancient and honorable Democratic doctrine of States' Rights. It was, in short, to be expected that supreme power over the banking system would be lodged neither in the financial capital, New York, nor in the political capital, Washington, but that there would be some balancing of the one against the other, with some influence over banking policies accorded to the provinces of the West and South.

2. THE FEDERAL RESERVE SYSTEM BRIEFLY DESCRIBED

Consider now the nature of the banking system that was devised under the political influences thus briefly sketched. The Federal Reserve Act provided, not for one central bank corresponding to the Bank of England, the Bank of France, or the Reichsbank of Germany, but for twelve regional federal reserve banks in some measure supervised and co-ordinated by a politically appointed body called the Federal Reserve Board, with headquarters in Washington. Each of the federal reserve banks serves primarily as a bankers' bank for the member banks of its district. The member banks of each district own all the stock of the reserve bank of their district, and elect six out of its nine directors — the other three being appointed by the Federal Reserve Board. The reserve banks are, therefore, privately owned and privately controlled except for the supervision exercised over them by the Federal Reserve Board. While in some respects it is the whole system of twelve reserve banks and the Federal Reserve Board combined that represent the core of our banking system, corresponding to the Bank of England or other similar central banks, it is the Federal Reserve Bank of New York that, in the eyes of many people, has played the true rôle of a dominating central bank in the United States. This is so because of its location in the financial center of the country and because of its enormous banking resources which greatly exceed those of any other reserve bank. The dominance of the New York Federal Reserve Bank has been particularly obvious in connection with international banking operations. It was with this bank and not with the Federal Reserve Board that the Bank of

England or the Bank of France dealt, up to 1934, in connection with international payments or gold movements. And so we may say that under the Federal Reserve System central banking power is divided into three parts — that exercised by the politically appointed Federal Reserve Board, that exercised by the dominant Federal Reserve Bank of New York, and that exercised in the aggregate by the other reserve banks scattered over the rest of the country. It appears probable that as a consequence of the new banking and currency legislation of 1933 and 1934 the Federal Reserve Bank of New York will play a relatively less important rôle in the future. In the following sections the various parts of the Federal Reserve System will be considered more in detail.

3. THE FEDERAL RESERVE BOARD

As originally provided in the Federal Reserve Act of 1913, the Federal Reserve Board was to consist of seven members, five to be appointed by the President of the United States directly as members of the Board, and two to be *ex-officio* members by virtue of holding the offices of Comptroller of the Currency and Secretary of the Treasury. Since the President appoints both these officials, the Reserve Board was to be composed exclusively of political appointees. To reduce somewhat the danger that these political appointees would abuse their great powers over the banking system, the Federal Reserve Act originally provided that at least two of the five directly appointed members should be persons experienced in banking or finance. This provision, together with the fact that the Secretary of the Treasury and the Comptroller of the Currency, the two *ex-officio* members, would tend to be persons experienced in banking or finance, was calculated to make it unlikely that the policies of the Federal Reserve Board would be dominated by persons who in ignorance of sound banking principles might wreck the Federal Reserve System by foolhardy measures.

Aside from the specific requirement that two of the five appointive members of the Reserve Board should be persons experienced in banking or finance, the original act required that these five members be selected with "due regard to a fair representation of the different commercial, industrial, and geographical divisions of the country." In 1922 the law was amended. The specific requirement that two members be persons of banking experience was omitted and agricultural interests were included in the list of interests entitled to fair representation. This change was made upon the insistence of the "farm bloc" that agriculture was not being given fair consideration in the policies of the Federal Reserve Board, and that a "dirt" farmer should be appointed

to membership on the Board. To make room for such a member the total membership of the Board was increased to eight, a rather nonsensical procedure, since, without giving any particular power to agricultural interests, it gave the Board an even number of members, thus bringing the danger of a deadlock upon important questions of policy.

In order to ensure some measure of continuity of policy, the term of office of the appointive members of the Board was made ten years, and of the first five appointed members one was to serve two years, one four, one six, one eight, and one ten years, so that thereafter one new member would be appointed every two years. This method of appointing the members made it unlikely that a complete change in membership of the Board would take place with a change in the political party in power and reduced the probability that political considerations would influence the actions of the members. On the other hand, the inclusion of the Comptroller of the Currency and the Secretary of the Treasury as members of the Board increased the menace of politics because it practically ensured the appointment of a majority of the members of the Board by the President during a four-year term. Moreover, the fact that the Secretary of the Treasury was designated by law as the Chairman of the Board brought the danger that the exigencies of the Treasury might be set above sound banking policies and public welfare in time of political stress. This danger was not made less by the great political power and social prestige which belongs to the Secretary by virtue of his office, and through which he may dominate and even intimidate the lesser members of the Board.

4. POWERS AND DUTIES OF THE FEDERAL RESERVE BOARD

The Federal Reserve Board is authorized and empowered to exercise general supervision over the federal reserve banks and over all member banks of the Federal Reserve System. At its discretion it may examine the accounts, books, and affairs of each reserve bank and of each member bank, and require such statements and reports as it may deem necessary. It may suspend or remove any officer or director of any reserve bank for just cause, and, for violation of any provision of the Federal Reserve Act, it may suspend the operations of any federal reserve bank, take possession of and administer the bank during such suspension, and, when deemed advisable, reorganize or liquidate it.

The Federal Reserve Board supervises and regulates, through the Treasury Bureau under the charge of the Comptroller of the Currency, the issue and retirement of federal reserve notes (the new type of bank notes) by the federal reserve banks, and it exercises a large measure of

control over the discounting and rediscounting operations of the federal reserve banks, in respect both to the rate of discount and the type of paper eligible for discount. Since the provisions of the law relating to note issue and discounting operations will be discussed in detail later, they need not be considered more at length here. Enough has been said to indicate that the Federal Reserve Board is under the law a most powerful administrative body, able, if its power is used, to exercise a large degree of control over the banking system of the country.

In respect to details of administration, the Board is empowered to employ such attorneys, experts, assistants, clerks, or other employees as may be necessary to conduct its business. The appointive members of the Board themselves are required to devote their entire time to the business of the Board, and, as government pay goes, receive liberal salaries. To defray its expenses the Board is empowered to levy semi-annually upon the federal reserve banks an assessment in proportion to their capital stock and surplus. Since the federal reserve banks must also pay their own expenses of operation, the whole system is thus made self-sustaining, and is not supported at the taxpayers' expense. While this is probably a wise provision, it is not without its disadvantages, as we shall see later.

5. THE FEDERAL RESERVE DISTRICTS

The exact number, location, and size of the federal reserve districts were not specified in the Federal Reserve Act. The act merely provided that as soon as practicable the Secretary of the Treasury, the Secretary of Agriculture, and the Comptroller of the Currency, acting as "The Reserve Bank Organization Committee," should designate not less than eight nor more than twelve cities to be known as federal reserve cities and should divide the continental United States, excluding Alaska, into districts, each district to contain only one of such federal reserve cities.

The law further provided that the districts should be apportioned with due regard to the convenience and customary course of business and need not be coterminous with any State or States. The organization committee was authorized to conduct an extensive investigation in determining to the best of its judgment the proper location of the reserve banks and the boundaries of the respective districts, and ample funds were provided for this purpose. As a result of the investigation, twelve districts were formed, numbered from 1 to 12, and in each district one city was designated as the location of the federal reserve bank of its district — these reserve banks to take the name of the city in which they were located, as the Federal Reserve Bank of New York, the Federal Reserve Bank of Boston, and so on.

In determining the extent of the districts the chief considerations were the sufficiency of banking resources and banking talent for the organization of a strong and well-managed reserve bank, the ease of access from the chief points within the district to the federal reserve city for the prompt transaction of business between the reserve banks and their member banks and the commercial and banking relations already established. The significance of these considerations will be better understood when it is pointed out that the capital of the reserve banks was to be subscribed by the member banks in proportion to their own capital and surplus, and that of the nine directors of each federal reserve bank six should be elected by the member banks of its district, while the other three, although appointed by the Federal Reserve Board, should have been at least two years residents of the district for which appointed. In selecting the reserve city itself, the chief considerations were the existing banking relationships and the transportation conditions affecting the ease of access to the city from other parts of the district.

It is obvious that with these considerations given due weight, the twelve federal reserve districts could be equal neither in banking resources nor in geographical extent, since such equality would have involved making some districts ridiculously large or small either in respect to resources or square miles. Equality in area or resources being out of the question, fixing the boundaries of the districts became a matter of sound banking judgment or political expediency, and the results indicate that banking judgment prevailed, although political expediency was not ruled out completely.

The boundaries of the twelve districts are shown on the map on page 485, and the resources of the banks and the area and population of the districts are given in the following table:

TABLE V. THE FEDERAL RESERVE BANKS AND DISTRICTS

Reserve Cities	Total resources of reserve bank September 30, 1932 *	Area of district — square miles †	Population of district, July 1, 1931 †
No. 1. Boston	\$395,084,000	61,345	7,834,000
No. 2. New York	1,958,490,000	51,890	16,343,000
No. 3. Philadelphia	440,417,000	36,842	7,619,000
No. 4. Cleveland	505,724,000	73,424	11,407,000
No. 5. Richmond	207,248,000	152,316	11,073,000
No. 6. Atlanta	176,542,000	248,226	11,339,000
No. 7. Chicago	1,111,410,000	190,513	18,606,000
No. 8. St. Louis	190,721,000	194,810	9,676,000
No. 9. Minneapolis	138,614,000	414,004	5,370,000
No. 10. Kansas City	189,232,000	480,438	7,967,000
No. 11. Dallas	108,476,000	386,116	7,078,000
No. 12. San Francisco	425,976,000	683,852	3,758,000
Total	\$5,847,934,000	2,973,776	124,070,000

* From *Federal Reserve Bulletin*, October, 1932, p. 662.† From *Annual Report of the Federal Reserve Board*, 1932, p. 336.

The foregoing table shows that the Federal Reserve Bank of New York, with total resources of \$1,958,490,000 on September 30, 1932, had resources almost nineteen times as great as those of the Dallas bank, amounting to only \$108,476,000, although the population of the New York district was little more than twice as great as that of the Dallas district, and the area of the New York district was less than one seventh the area of the Dallas district. In respect to area, District No. 12, the largest district, is more than eighteen times as great as District No. 3, the smallest district, but the former has approximately seven ninths the population of the latter, and the reserve bank of the former has almost two thirds the resources of the reserve bank of the latter. The districts vary much less in population than in area and resources, the most populous district, No. 7, having less than four times the population of the least populous, No. 9. One might suppose that the organization committee weighted the factor of population more heavily in arranging the districts than the factors of area and banking resources. Possibly this was an application of Democratic principles. It should be understood, of course, that at the time of organization, in 1914, the ratios of resources and population just given did not apply exactly.

The law makes provision for the establishment of branches and agencies of the reserve banks, and these branches tend to overcome some of the defects in the delimitation of districts. For example, in the huge District No. 12, which, it seems, might well have been divided into two districts, with another reserve bank located either in Portland or Seattle, five branches of the reserve bank of San Francisco have been established. Altogether twenty-five branches and two agencies of the twelve reserve banks combined have been established. The location of these branches is shown on the map. In 1929, these branches and agencies handled checks to the amount of \$72,000,000,000. By 1932 the amount of checks handled had declined to \$34,000,000,000 along with the general decline in business. As compared with these figures the total amount of checks handled by the twelve federal reserve banks combined was \$367,000,000,000 in 1929, and \$177,000,000,000 in 1932.

6. GENERAL PURPOSE OF THE FEDERAL RESERVE BANKS

The general purpose of the federal reserve banks may be said to be to serve collectively, or as a group, as the central banking mechanism of the country, and individually as bankers' banks for the member banks of their respective districts. In addition to acting as bankers' banks, the reserve banks serve also as fiscal agents for the National Government. It was the expectation of the creators of the Federal Reserve System

FEDERAL RESERVE DISTRICTS



- Boundaries of Federal Reserve Districts
- - - - Boundaries of Federal Reserve Branch Territories
- ⊙ Federal Reserve Bank Cities
- Federal Reserve Branch Cities
- Federal Reserve Bank Agency

that the form of organization and the powers of the reserve banks would permit them to provide the country with banking facilities far superior to those provided under the National Banking System. The currency would become sufficiently elastic to avoid all financial stringencies arising from seasonal fluctuations in trade and industry. The close relation between the reserve banks and the Government would bring an end to the evils of the Independent Treasury System. The international flow of gold would be regulated by centralized control over the discount rate. There would be no more failures of solvent banks through lack in time of panic of a ready market for their secondary reserves. In times of stress soundly managed banks could always obtain abundant supplies of cash from their reserve bank, provided only they had plenty of commercial paper eligible for rediscount under the law. Through the development of a national market for various types of commercial paper, particularly, bank acceptances, banks would not only obtain the advantage of a highly desirable form of secondary reserve, but a more uniform rate of interest would displace the great disparity in rates hitherto prevailing, to the disadvantage of the West and South, where the higher rates prevailed, and the financing of foreign trade by American banks would be fostered, with resultant benefits to importers, exporters, and American industry, as well as to the banks directly concerned. The form of organization and the powers of the reserve banks whereby these desirable ends were to be achieved will now be considered more in detail.

7. DIRECTORS AND STOCKHOLDERS OF THE RESERVE BANKS

Each federal reserve bank is governed by a board of nine directors, of whom three are appointed by the Federal Reserve Board, while the other six are elected by the stockholders of the reserve bank itself. The stockholders of the reserve banks are the member banks. The member banks of each federal reserve district consist of all national banks in that district, membership for these being compulsory, and of such state banks and trust companies in the district as are able and willing to meet the specified requirements relating to capital, cash reserves, and other matters discussed in later pages. In order to ensure abundant capital for the reserve banks, the law required that each member bank subscribe to stock in its reserve bank equal in par value to six per cent of the amount of its own capital and surplus, one half of this sum to be paid in within a few months after organization, and the other half at any time in the future when it might be required. There was a further provision that in the case of any reserve bank in which the subscrip-

tions of the member banks did not amount in the aggregate to \$4,000,000, the balance might be subscribed by the general public, and the general public failing to take the stock, by the Federal Government itself. It turned out, however, that the first three per cent paid in by the member banks represented all the capital required by each of the reserve banks, and the other three per cent has never been called in from the member banks, and no stock has been taken either by the public or the Government.

Of the six directors chosen by the member banks three are to be representative of the member banks, and presumably bankers, and three are at the time of their election to be actively engaged in commerce, agriculture, or some other industrial pursuit. The first three are called Class A directors; the second three, Class B directors; and the three appointed by the Federal Reserve Board are called Class C directors. The Federal Reserve Act specified in some detail the exact method of election so that one Class A and one Class B director shall be chosen by the large banks, one by the middle-sized banks, and one by the small banks, and directs the Federal Reserve Board to classify the member banks of each district for this purpose into three groups approximately equal in number and consisting of large, medium, and small banks respectively.

The Class C directors, who are appointed by the Federal Reserve Board, shall have been at least for two years residents of the district for which they are appointed, and one of these, who must be a person of tested banking experience, is designated by the Federal Reserve Board as chairman of the board of directors of his reserve bank, and as federal reserve agent. He serves thus in a dual capacity as chairman of the board of directors of the reserve bank and as representative on the ground of the Federal Reserve Board. In his latter capacity he maintains a local office of the Federal Reserve Board on the premises of the reserve bank.

We may note in passing that among the nine directors of each reserve bank there are four bankers, including the federal reserve agent. Three members of the board, including also this agent, represent the Government; and three represent business other than banking. But since six members are chosen by the banks, it is obvious that banking interests will tend to dominate the board, and if the reserve banks are not soundly managed, it is because the bankers who control them are either ignorant of sound banking principles and practices or choose to ignore them or have unsound policies forced upon them by the Federal Reserve Board.

8. STATE BANKS AND TRUST COMPANIES AS MEMBER BANKS

While membership in the Federal Reserve System was made compulsory for national banks, it was made optional with state banks and trust companies. Consider the reason for this distinction. The National Government had the power to compel the national banks to join or to surrender their charters. But over the state-chartered institutions the Federal Government had no such power; it could only persuade and not compel them to join. Since it was extremely desirable to induce the state banks and trust companies to join in large numbers in the interest of a strong and unified central banking system, they were offered the privilege of joining the system and of enjoying the direct advantages of membership on condition of meeting specified requirements, such as were imposed upon national bank members in respect to capital, cash reserves, and other matters. In short, with some exceptions to be noted later, the Federal Reserve Act required of state-chartered banks as much as and no more than it required of national banks as a condition of entering the Federal Reserve System, and this seemed fair enough, since they thus obtained all the advantages of national banks, except the note-issue privilege, while retaining some advantages under state charters not enjoyed by national banks.

Most of the state banks and trust companies, however, considered the terms too hard, or found it impossible to comply with them, so that only a small proportion of these banks became members. The federal reserve banks opened their doors for business in November, 1914. On June 30 of that year the number of state banks and trust companies was 16,076, and the number grew until it reached a maximum of 19,782 in 1922, after which these banks decreased in number primarily as a result of failures and mergers or consolidations. Out of these thousands of banks only 37 were members of the Federal Reserve System at the beginning of 1917, more than two years after the system was established. During the time we were engaged in the World War and up to 1921, the number of state banks and trust companies that entered the system increased rapidly as a result of a combination of causes, including less stringent cash reserve provisions, need for aid from the federal reserve banks, and patriotic reasons. But even then less than ten per cent of these banks entered the Federal Reserve System — their membership in the system having risen only to 1481 at the beginning of 1921. After a small further increase to 1639 in 1923, the number of state bank and trust company members declined until at the end of 1932 it reached the low figure of 805, a large proportion of this decline having been the result, however, of bank failures and consolidations rather than voluntary withdrawal from the system.

On June 30, 1914, when state banks and trust companies numbered 16,076, the number of national banks was only 7525, and in 1922, when state banks and trust companies reached their maximum number of 19,782, national banks numbered only 8249. At no time during the period 1914 to 1922 did the number of national banks equal one half the number of state banks and trust companies, and with only a small proportion of the state banks joining the Federal Reserve System, the result was that about two thirds of the total number of commercial banks in the country remained outside the system. Obviously, the country had fallen far short of achieving the unification of its banking system. It had now, one might think, a centralized system, operating alongside forty-eight decentralized systems controlled by the forty-eight States. The situation was, however, not so bad as might appear.

Among the state banks and trust companies that entered the Federal Reserve System were most of the stronger institutions with large resources, so that the total resources of the member banks represented much more than one third of the total resources of all commercial banks in the country. In June, 1915, for example, total loans and investments of member banks amounted to \$8,313,000,000, or 41 per cent of the total loans and investments of all banks, amounting to \$20,788,000,000. By June, 1918, when the membership of the state banks had increased considerably, the total loans and investments of member banks had risen to \$18,507,000,000, or to 58 per cent of the loans and investments of all banks, amounting to \$31,813,000,000. The next year there was a small further relative increase, and from 1919 to 1930, inclusive, the loans and investments of the member banks varied from 60 to 61 per cent of the loans and investments of all commercial banks. From 1930 to 1933 this percentage was somewhat increased primarily as a result of a greater proportion of suspensions among non-member banks than among member banks, and a sharper decrease in total loans and investments of the former than of the latter.

Another factor which needs to be considered here is the fact that the non-member banks indirectly obtained the benefits flowing from the centralized Federal Reserve System in various ways which will be noted in later pages. The fact that they might derive benefits from the system without joining it and sharing in its burdens, while it tended to strengthen the financial position of the country as a whole, represented a powerful motive for not joining, and is one of various reasons why the great majority of the state bank and trust companies remained outside.

We may consider briefly now some of the more important other reasons why the state banks did not become members. An early objection

was the requirements relating to examination. The state banks feared the results in expense and restraint of submitting to federal examination under the authority of the Federal Reserve Board. They preferred to submit to examination by friendly state examiners.

Many state country bankers were not convinced that they required the services of the reserve banks, preferring to retain their old correspondent relations with the large city banks rather than accept the relationship prescribed by law with the reserve banks. The correspondent banks collected checks for the country banks, often without charge, advanced loans to them at reasonable rates of interest, and, what was perhaps of greater importance, paid interest to them on deposits maintained for exchange or other purposes. The fact that under the Federal Reserve System the member banks were required to deposit at first part of their legally required reserves, and later all of them, in the federal reserve banks, and obtained no interest upon them, was a particularly sore spot, and probably kept more state banks from joining the system than any other reason except inability to meet the legal requirements of membership. Under state banking laws they had the same privilege that country banks of the National Banking System had had, of depositing part of their cash reserves with city correspondents and drawing interest upon them — thus engaging in the delectable process of eating their cake and having it too. The state banks objected also in some cases to the compulsory investment of member banks in the stock of the reserve banks, the direct return on which was limited to six per cent a year. Another drawback to membership in the reserve system, from the point of view of some state banks, was the restriction on loans by which no member bank could lend to any one person, firm, or corporation an amount greater than ten per cent of the bank's capital and surplus.

In addition to these various reasons why the state banks and trust companies did not join the Federal Reserve System, there were two reasons of a different type. One of these reasons was that they could not meet the requirements of membership in respect to capital, the minimum capital required for member banks, varying from \$25,000 to \$200,000 according to the population of the city in which the bank is located. The other was that various provisions of state laws made it practically impossible for some banks to enter the system — a particularly troublesome problem arising from the refusal of some States to permit state-chartered banks to substitute the cash reserve requirements of the Federal Reserve System for those laid down by state law. To meet two sets of cash reserve requirements handicapped a bank in competition with other banks which had to meet only one. State Governments

in some cases were slow to remove such handicaps, and thus aid in developing the Federal Reserve System because these Governments and the state banks had become engaged in a bitter controversy with the Federal Reserve System over the question of par collection of checks, a struggle curiously reminiscent of the struggle between the Second Bank of the United States and the State Governments and state banks over the prompt redemption of state bank notes.

How important inability to meet legal requirements of membership in the system was in keeping state banks outside is indicated by the fact that in June, 1922, when more than 18,000 state banks and trust companies were non-members, the number of eligible non-members was only 9678. Presumably some, but only a small proportion, of the non-eligible non-members would have joined had they been eligible. Since only about one sixth of the eligible state banks and trust companies had entered the system, it is reasonable to suppose that only about that proportion of non-eligible members would have desired to join, or about 1400, which we may then set down as the number actually debarred by requirements they could not meet. It is not surprising, therefore, that the increase in state bank and trust company membership was not great, when, under the Agricultural Credits Act of 1923, state banks and trust companies possessing at least sixty per cent of the capital required of national banks were permitted to become members, provided that they agreed to increase their capital to the full one hundred per cent within five years, at the rate of twenty per cent of the deficiency each year.

9. THE FAVORED POSITION OF STATE BANKS

Doubtless the state banks underestimated the direct advantage to themselves of membership in the Federal Reserve System and overestimated the disadvantages. But even if it be granted that all the reasons they had for not choosing to join were valid, when viewed from the strictly individual point of view, it does not follow that the banks were justified in not joining, and collectively gained advantages by not doing so. It is obvious that if the national banks had acted similarly and had not been compelled to join, there would have been no reserve banks and no Reserve System, and from the lack of such a system the state banks would have lost far more than the cost to them of bearing their fair share of the burden of maintaining it. The responsible officials of eligible state banks which maintained a "sturdy individualist" point of view while other banks were co-operating to form a centralized banking system for the good of the country, it must be said candidly, were

brothers under the skin to the slacker who, in war-time, evades military service while his comrades carry on, on the assumption that the advantages he gains from engaging in battle are outweighed by the disadvantages. During the World War we resorted to conscription to make everyone do his part, and to round up those who under voluntary service would have been slackers. It is unfortunate that we could not likewise have resorted to conscription when we established our centralized banking system, and compelled every commercial bank to join and meet the legal requirements or surrender its charter. The writer is aware that many bankers and state officials would take exception to this statement, and can present apparently strong arguments against such a course. But in his opinion the advantages of universal compulsory service for all banks would have far outweighed the disadvantages, and this seems to be the view of many influential business men at the present time.

The contrary course of applying compulsion only to national banks and resorting to persuasion in the case of state banks not only tended to weaken the system, but resulted in such unfair treatment of national banks as to bring the danger of wholesale conversion of national banks into state banks. This danger was lessened by the McFadden National Bank Bill of 1927 which was designed to place the national banks more nearly on a basis of equality with the state banks in respect to powers and privileges. The advantages of the state banks arose from two sources: first, they retained certain powers given to them by state charters and not given to national banks operating in the same State, and second, they were offered certain inducements to join the Federal Reserve System which were not offered to national banks whose membership was compulsory. Among the privileges and powers enjoyed by state banks but not by national banks were the following:¹

State banks might withdraw from the system at will, after six months' notice. They could lend to any one borrower an amount in excess of ten per cent of their capital and surplus. They were not subject to examination by the Comptroller of the Currency, but were subject only to — often less rigorous — state control, and while they were subject to examination by the federal reserve banks, the reserve banks frequently accepted state examinations as sufficient. Trust companies in some States had perpetual charters and so could accept permanent trusts, whereas national banks with trust company powers could not accept permanent trusts because their charters ran only for a limited time. State banks were subject to less rigorous restrictions in making

¹ Tippetts, *State Banks and the Federal Reserve System*, pp. 364-66. D. Van Nostrand Company, 1929.

real estate loans than were national banks. State banks enjoyed more extensive branch-banking privileges than national banks. National banks could not engage in branch banking outside their own city except by absorbing a state bank with out-of-town branches.

The McFadden Bill removed some, but not all, of these inequalities. It gave the national banks broader powers in respect to real estate loans and thereby encouraged bad banking, gave them indeterminate charters and broadened their trust company powers, modified the restrictions applying to them in respect to the ten per cent limitation on loans to any one person, firm, or corporation, and placed them on a basis of equality with state banks in respect to further expansion of branch banking.

It is probable that the greater degree of equality between national bank and state bank members of the Federal Reserve System would have been more advantageously realized by withdrawing some of the powers and privileges from the state banks rather than by conferring some of the foregoing privileges upon the national banks. But without the power to compel the state banks to become members of the Reserve System, the National Government could not abridge their powers and at the same time induce them to maintain membership in the system. Further discussion of this problem will be found in Chapter XXVIII, wherein are considered the changes made by the Banking Act of 1933.

10. THE FEDERAL ADVISORY COUNCIL

One line of communication between the Federal Reserve Board and the federal reserve banks was provided for by the Federal Reserve Act through the provision that three directors of each reserve bank be appointed by the Federal Reserve Board, and that one of these, to be called the Federal Reserve Agent, be chairman of the board of directors and special representative of the Federal Reserve Board with an office on the premises of the bank. A second line of communication, running, one might say, in the opposite direction, was provided for in the form of the Federal Advisory Council. This Council consists of twelve members, one elected by the board of directors of each federal reserve bank. It is directed by law to hold at least four meetings a year in Washington, and oftener, if called by the Federal Reserve Board, and it may hold additional meetings on its own initiative in Washington or elsewhere as it may deem necessary. Its functions, as its title indicates, are purely advisory. It has the power, by itself or through its officers,

(1) to confer directly with the Federal Reserve Board on general business conditions; (2) to make oral or written representations concerning matters

within the jurisdiction of said Board; (3) to call for information and to make recommendations in regard to discount rates, rediscount business, note issues, reserve conditions in the various districts, the purchase and sale of gold or securities by reserve banks, open-market operations by said banks, and the general affairs of the reserve banking system.

The object in view in establishing this Council was that of keeping the Federal Reserve Board informed by men who could speak with authority of actual banking conditions within the various federal reserve districts. In addition to these two lines of communication between the Federal Reserve Board and the reserve banks thus specifically established by the Federal Reserve Act, a third, and apparently an unexpected line of contact developed — the line of contact between the Federal Reserve Board and the governors of the federal reserve banks.

11. THE GOVERNORS OF THE RESERVE BANKS

The governors of the federal reserve banks, as such, were not named in the Federal Reserve Act, but, as the Federal Reserve Board interpreted the law, it was the intent of Congress that each reserve bank should have a chief executive officer, other than the chairman of the board, who was also the federal reserve agent, who was to correspond in functions to the president of the ordinary commercial bank. The title of governor for this official was approved apparently for two reasons: first, it made the management of the reserve banks, with a board of directors, chairman of the board, and a governor, correspond with the form of organization of the Federal Reserve Board itself; secondly, the title of governor distinguished the chief executive of the reserve banks from the presidents of ordinary commercial banks.

The governor may be chosen from among the directors of the reserve bank, or may be brought in from outside. It has become customary to choose men from outside, so that ordinarily the governor of the reserve bank does not sit on the board of directors. Since the reserve banks have naturally desired to have men of great banking ability and reputation as governors, they have offered salaries commensurate in some degree with the abilities of the men they have desired to attract. As a consequence the governors of the reserve banks have tended to be men of greater reputation, more commanding personalities, and higher salaries than the federally appointed chairmen of the board, or federal reserve agents, and have tended to become the dominating figures in their respective banks. In 1931 the salaries of the governors ranged from a minimum of \$25,000 a year paid to the governors of the Federal

Reserve Banks of Richmond, Atlanta, St. Louis, Minneapolis, and Kansas City, to a maximum of \$50,000 paid to the governor of the Federal Reserve Bank of New York, with salaries of the other governors ranging from \$30,000 to \$35,000. While the \$50,000 salary of the governor of the Federal Reserve Bank of New York and the \$35,000 salary of the governor of the Federal Reserve Bank of Chicago were matched by the salaries of the respective reserve agents of these banks, the reserve agents of all the other banks received lower salaries than the governors. However, the minimum salary of the reserve agents was the rather generous sum of \$20,000, the rate paid to all of the reserve agents except those at New York, Chicago, and San Francisco; the last-named received \$24,000.

Willis¹ describes in detail how the Reserve Board gradually shifted its methods of communication with the reserve banks from the reserve agent or chairman of the board to the governor as a direct consequence of the greater power wielded by the latter. It was not long before it was found desirable for the twelve governors to hold meetings to discuss matters of common interest and to obtain some degree of uniformity in the conduct of their banking operations, particularly in relation to the open-market operations of the banks to be considered in the next chapter. So the Conference of Governors became an established institution, and tended to overshadow in importance the Federal Advisory Council, and even to usurp some of the functions of the Federal Reserve Board. Such a usurpation of powers would have defeated one of the main purposes of the law, namely, the division of powers between the Government and the bankers. The Conference of Governors was, of course, a one hundred per cent banker affair. It became necessary in order to preserve the Federal Reserve System as devised by law to place a definite limitation upon the scope of activities permitted to the Conference of Governors. But the Reserve Board finds this extralegal conference a useful addition to the Federal Reserve System, and confers regularly with the governors as well as with the Federal Advisory Council.

12. SUMMARY

By way of summary we may say now that the Federal Reserve System consists of the Federal Reserve Board, the twelve federal reserve banks, the member banks, the Federal Advisory Council, and the Conference of Governors. The Federal Reserve Board consists exclusively of men appointed to office by the President of the United

¹ H. P. Willis, *The Federal Reserve System*. The Ronald Press Company, 1923.

States. The federal reserve banks are privately owned banks, their stock being held exclusively by the member banks, and each is governed by a board of nine directors, of whom six are elected by the member banks, while three are appointed by the Federal Reserve Board. The member banks consisted, until the Banking Act of 1933, of all national banks, numbering at the end of 1931, 6368, and of such state banks and trust companies as were able and willing to meet requirements of membership, the number of these at the end of 1931 being only 878, as compared with 13,013 banks other than national reported to the Comptroller of the Currency by state banking departments as of June 30, 1932. At the end of 1931 the loans and investments of member banks constituted approximately seventy-seven per cent of the total loans and investments of all commercial banks (mutual savings banks excluded). The Federal Advisory Council is composed exclusively of bankers and has advisory powers only. The Conference of Governors is composed exclusively of bankers, and by virtue of the positions of its members is a most powerful body, in some respects more powerful than the Federal Reserve Board itself.¹

¹ Structural changes in the Federal Reserve System made by the Banking Act of 1933 are discussed in Chapter XXVIII.

CHAPTER XX

FUNCTIONS OF THE FEDERAL RESERVE SYSTEM

1. SOURCES OF RESERVE BANK FUNDS

A DISCUSSION of the functions of the Federal Reserve System resolves itself largely into a discussion of the activities of the federal reserve banks in their relation to the member banks on the one hand and to the Federal Reserve Board on the other. The essential purpose of the reserve banks is to serve as bankers' banks for the member banks and to act collectively as a unifying and stabilizing agency for the banking system as a whole. All the powers conferred upon them have this end primarily in view. The intent of the law was presumably to endow them with powers and resources ample to serve this purpose, but at the same time so to restrict their operations by legal limitations and political control as to prevent them from abusing the great power conferred upon them.

The functions of bankers' banks, or central banks, have been discussed in some detail in Chapter XVIII, but it will do no harm to remind the reader that an efficient bankers' bank must always be able to advance loans to member banks in good standing by discounting for them eligible short-term commercial paper, such as promissory notes and trade acceptances, or to purchase from them in time of stress investments representing sound secondary reserves, such as government securities and bank acceptances, to the end that no solvent commercial bank will be forced to the wall for lack of ample cash reserves in the case of either a run on an individual bank or in a general banking and credit crisis. To be always in a position thus to aid its member banks under all sorts of conditions requires not only that the bankers' bank have ample resources, but that these resources be employed with circumspection and maintained in reasonably liquid condition. A properly drawn central banking law will prove a great aid in the maintenance of a sound condition of the central banking mechanism, but will not insure such soundness. Fully as important as the provisions of the law are the judgment and discretion of the men designated to administer them, and too great reliance upon legal phraseology and the power of words to create a good banking system may prove to be painfully disillusioning in the end. The bearing of this remark may perhaps be observed in our later chapters on the Federal Reserve System in operation. In this chapter and the next we shall be concerned primarily with those provisions of the Federal Reserve Act, de-

signed, on the one hand, to give the reserve banks ample resources with which to operate effectively, and, on the other hand, to guide and to restrict them in the methods of applying those resources. In the subsequent chapters we shall observe how the scheme has worked in practice.

The original funds of the reserve banks were provided by the cash subscriptions to their stock by the member banks, and by the deposit with them of part of the member banks' legally required cash reserves. As previously stated, all member banks were required by law to subscribe to the stock of their respective reserve banks an amount equalling 6 per cent of their own capital and surplus, half of this amount to be paid within nine months from the first call of the organization committee, and the rest later. Only the first 3 per cent has ever been called in, but this 3 per cent was required to be paid to the reserve banks by the member banks in gold or gold certificates, so that a gold reserve was thus provided for the reserve banks equal to 3 per cent of the total capital and surplus of the member banks of their respective districts.

A larger source of reserve bank funds was represented by the cash reserves which the member banks were required to place on deposit with their reserve banks. In respect to reserve requirements the member banks were classified under the Federal Reserve Act as country banks, reserve city banks, and central reserve city banks, the distinction being the same as under the National Banking Act. Central reserve city banks were member banks located in New York, Chicago, and St. Louis; reserve city banks were member banks located in the various cities designated as reserve cities under the National Banking Act; and country banks were all other member banks. It should be understood that all member banks, including state bank and trust company members, were embraced under this classification, and not merely national banks as before. The Federal Reserve Board was authorized to remove or add cities to the list of reserve and central reserve cities, and one application of this power was the removal of St. Louis from the list of central reserve cities in 1922 and its addition to the list of reserve cities, so that since that date there have been only two central reserve cities — Chicago and New York.

Originally, under the Act of 1913, the country banks were required to maintain cash reserves of 12 per cent against demand deposits and 5 per cent against time deposits; reserve city banks, 15 per cent against demand deposits and 5 per cent against time deposits; and central reserve city banks, 18 per cent against demand deposits and 5 per cent against time deposits. For a time the country banks and the reserve city banks were permitted to leave part of their required reserves on deposit with cor-

respondent banks in reserve and central reserve cities as theretofore, a provision made to prevent too great a shock to established banking relations from the sudden transfer of all such cash reserves. But immediately upon the establishment of the federal reserve banks, country banks were required to pay into their reserve banks two twelfths of their total required cash reserves, reserve city banks three fifteenths, and central reserve city banks, seven eighteenthths. After three years the cash reserves of all member banks were required to be kept either in their own vaults or in their federal reserve banks, in the following proportions:

Country banks, four twelfths in their own vaults, five twelfths in the federal reserve bank, and three twelfths at their option in either their own vaults or in the federal reserve banks. For reserve city banks these relative proportions were five fifteenths, six fifteenths, and four fifteenths respectively; and for central reserve city banks six eighteenthths, seven eighteenthths, and five eighteenthths.

Before the three years during which the gradual transfer of redeposited reserves was to be effected expired, the law was amended. The percentage of required reserves was reduced for all classes of member banks, and all required reserves were to be deposited in the federal reserve banks. The change was provided for by the Act of June 21, 1917, essentially a war measure designed to strengthen the Federal Reserve System and to increase its power of expanding currency and credit. Concerning this more will be said later, but here we are concerned primarily with the relation of these reserve requirements to the funds available for federal reserve bank operations.

It is obvious that the deposits of required cash reserves of member banks in federal reserve banks represented a much greater sum eventually than their capital stock subscriptions, because deposits of member banks are several times as great as their capital and surplus, and the percentage of cash reserves required to be deposited was 3 per cent of time deposits of all member banks, and 7 per cent of demand deposits of country banks, 10 per cent of demand deposits of reserve city banks, and 13 per cent of demand deposits of central reserve city banks. However, not all these deposits needed to be made in gold, or other lawful money, the law permitting not to exceed one half of each installment to be paid in eligible paper; that is to say, in promissory notes, acceptances, etc., properly endorsed by the member bank.

Further sums had to be paid in to the reserve banks when additional banks joined the system, or when old members increased their capital and surplus. Additional funds were obtained also by the federal reserve banks in the form of deposits in excess of legal requirements by the mem-

plied with ample banking resources capable of being used by these banks with tremendous inflationary effect unless restricted by the good sense of the management or the provisions of the law.

The reserve banks were given the power to issue bank notes of two types, to be considered in detail in later pages, and to make loans to member banks. Having these powers it follows that they can make loans to the member banks in any one of three ways, namely, deposits subject to check, bank notes of the reserve banks, and other kinds of money. How great the inflationary power of the reserve banks might be if they were permitted to expand operations without check of law or banking prudence to the extreme limit of their cash reserves is indicated by the fact that not only might each dollar of cash reserve held by them afford a reserve basis of loans of many dollars, just as in the loan expansion process of an ordinary commercial bank, but the loans advanced to member banks might in turn become cash reserve of the member banks, or even of non-member banks, each dollar of which in turn might become the basis of loans of many dollars. It is in fact conceivable that by such a pyramiding of bank credit each dollar of actual cash reserve held by the central banks might become the basis of credit expansion amounting to \$50 or \$100, or even more — eventual collapse, of course, following upon such reckless expansion.

To prevent such reckless expansion and inevitable collapse, certain provisions were written into the law to restrict expansion of reserve bank credit to what were considered safe and reasonable proportions. These restrictions were of two types: first, minimum cash reserve provisions in respect to deposits and notes issued by the reserve banks, and, second, restrictions upon the loan and discount and investment operations of the reserve banks. The minimum cash reserve provisions were primarily for the purpose of preventing undue expansion of reserve bank credit, and the other set of restrictions was primarily for the purpose of preventing reserve bank credit from being used for purposes other than the promotion of short-term advances to business men engaged in agricultural, industrial, or commercial operations. Concretely, it was the intent of the framers of the Federal Reserve Act to restrict the use of reserve bank credit by member banks to such operations as lending to a retailer money with which to pay for goods shortly to be sold, the proceeds of which would provide the means for promptly repaying the loan; or of lending to a manufacturer the funds with which to buy raw materials, which when used in the process of manufacture would in a few months result in finished goods which could be sold for money enough to liquidate the loan; or of advancing funds to a farmer to pay for corn to be

ing to the accepted doctrine of international trade relations, as imports increase and exports diminish, unless there is at the same time world-wide inflation of money and credit. If, however, credit expansion takes the form of speculation in real estate and securities, the inflation will not tend to be checked by the export of gold, but may even be aggravated by an inflow of gold. Real estate and domestic corporation securities cannot, of course, be imported, except in the sense that such blocks of real estate and securities as may be owned abroad may be sold to domestic buyers. On the contrary, wild inflation of real estate and security prices in any one country tends to attract foreign buyers, increases the "favorable balance" of trade by means of these invisible exports, and actually tends to bring an inflow of gold, which added to existing bank reserves permits further inflation. A notable case in point is our stock-market inflation orgy of 1929. Lacking the early check administered by exports of gold and compulsory restriction of bank credit, such security and real estate speculation and inflation may rise to disastrous heights, with ultimate disastrous consequences. When the collapse comes there is, of course, the danger of an external drain of gold when the foreigners unload their speculative holdings in securities and real estate and withdraw their remaining capital from the country.

There is ample justification, then, on more than one ground, for the provisions in the law designed to restrict the use of federal reserve bank credit to short-term advances to business men engaged in agricultural, industrial, and commercial operations, and to prevent its use in fixed capital investment and real estate and security speculation. Experience has demonstrated, however, as will be shown later, that the best security against disastrous inflation of credit lies in the restriction laid upon the total amount of credit expansion rather than in restrictions upon the purposes for which credit may be extended. The latter type of restrictions are too easily evaded or circumvented to be effective. There is reason to regret, therefore, that the Federal Reserve Act relied so largely on restrictions upon the kind of reserve bank credit to be extended, and did not provide for more stringent regulation of the total amount of reserve bank credit expansion. This point will be considered further in our discussion of the Banking Act of 1933 in Chapter XXVIII.

4. FEDERAL RESERVE NOTE ISSUE: ORIGINAL PROVISIONS

The Federal Reserve Act provided for the issue by the federal reserve banks of two kinds of bank notes, called federal reserve notes and federal reserve bank notes respectively. The former are of much greater importance than the latter and will be discussed

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the amount of notes issued would tend to expand with the degree of business activity and the amount of loans or discounts of member banks obtained at the reserve banks. The more rediscounting the reserve banks did for member banks, the more notes and bills they would have on hand eligible as collateral for note issues, and the more federal reserve notes they could, and probably would, issue, up to the limits permitted by the 40 per cent gold reserve requirement. Such expansion of note issue would meet not only the seasonal needs of business, but also the additional demands for money in actual circulation in times of greater activity in business in the prosperity phase of the business cycle, or in time of credit crises and runs on banks by frightened depositors.

To permit a greater degree of elasticity, in time of special emergency the Federal Reserve Board was empowered to suspend the 40 per cent gold reserve requirement. In case of such suspension, the law provided that a tax should be levied upon the reserve banks as follows: When the gold reserve fell below 40 per cent, but not below 32.5 per cent, a tax of not more than 1 per cent per annum upon such deficiency; when the reserves fell below 32.5 per cent, a tax increasing at the rate of not less than 1.5 per cent per annum upon each 2.5 per cent of additional deficiency in reserves. This tax was to be paid by the reserve bank, but the bank was to reimburse itself by increasing the rate of interest or discount. The purpose of this provision of the law was to permit practically unlimited quantities of reserve notes to be issued in times of panic or stress, so that no bank would need to close its doors for lack of ready cash if it had eligible paper discountable at the reserve bank. The progressive tax on these issues was calculated to make their issue unprofitable both to the reserve banks and the member banks, and to compel their early retirement after the emergency was over. With a decline in the demand for cash either after the passing of a money panic or ordinary seasonal requirements, or a general decline in business activity, not only the taxed issues would tend to be retired, but also the ordinary issues, untaxed and protected by a 40 per cent gold reserve or more, for the following reasons. With less cash required or wanted in general circulation, deposits of cash, including reserve notes, would increase in the commercial banks. For the member banks the reserve notes would not count as cash reserve and would be idle, unproductive capital. The member banks would, therefore, send them into their federal reserve banks, to be credited to their account, thus reducing their indebtedness to the reserve banks or increasing their reserves. Reserve banks coming into possession of notes issued by other reserve banks would send these home for redemption, and all the reserve banks, feeling no further demand for cash to be paid out to mem-

ber banks, would retire rather than reissue their own notes. The total issue of reserve notes would thus shrink until the next period of expanding demand developed.

It may be observed that the provision for suspension of the 40 per cent gold reserve requirement by the Federal Reserve Board, with the progressive tax on the notes issued in excess of the amount permitted under the 40 per cent reserve requirement, was modeled after the German law under which the Reichsbank, before the war, was permitted likewise to issue notes beyond the usual amount, subject to a tax. There were, however, important differences between the German and the American note-issue provisions. The German tax was applied upon all notes issued by the Reichsbank in excess of the gold reserve plus a moderate tax-free contingent which did not vary with the amount of gold reserve; the tax began at the high rate of 5 per cent; and the minimum gold reserve requirement of 33 per cent was not suspended. The total profitable and the total possible issue of notes by the Reichsbank was, therefore, much more severely limited than the profitable and possible issue by the federal reserve banks. The danger of inflation of the currency by the bank-note route was much greater under the Federal Reserve Act than under the German law. There was always the possibility, of course, that the German law might be amended and the untaxed contingent increased under pressure of financial events.

The danger of inflation under the Federal Reserve System arises not so much from the provision for the suspension of the 40 per cent gold reserve requirement as from the 40 per cent provision itself, which permits the reserve banks to increase their note issue rapidly when gold reserves themselves increase rapidly, up to two and one half times the amount of such reserves. Any tendency on the part of the reserve banks normally to make full use of their note-issue privilege up to the 40 per cent limit would leave them in a very poor condition to make further advances to member banks in times of emergency. With the suspension provision in the act, the legal minimum gold reserve against notes might well have been fixed higher, at 50 per cent, or possibly even at 60 per cent. Only once since the establishment of the reserve system has the tax penalty for deficiency of gold reserve against note issues been applied: in 1920 eight of the reserve banks suffered temporary small deficiencies in reserve and paid to the United States Treasurer a tax amounting in the aggregate to \$24,664.05. At that time inflation had been carried very far before the tax was applied, as will be noted in more detail later. In March, 1933, only the suspension of gold payment prevented the reserve ratio of all the reserve banks from falling below the legal minimum.

5. FEDERAL RESERVE BANK NOTES

The most important statement that can be made about the federal reserve bank notes is that they have been of no great importance except as a nuisance and an unnecessary encumbrance upon the Federal Reserve System, and they should not be confused with the federal reserve notes just discussed. They are a by-product, or perhaps one might say a waste-product, resulting from the establishment of the Federal Reserve System.

It was the desire of the framers of the Federal Reserve Act that the federal reserve notes, designed to vary in quantity with the needs of business, should not merely supplement, but should displace, the national bank notes, based upon government bonds, and not responsive in quantity to the state of business activity. But the national banks in 1913 had an investment in government bonds of approximately \$700,000,000 to secure their note issues of about the same amount. These bonds bore an interest rate of only two per cent and their market value at the time was an artificial non-investment value based in large part upon the value of the note-issuing privilege which their possession gave to the banks. To have required the national banks to retire their notes at once would have thrown upon the market hundreds of millions of dollars of these bonds, which as a pure investment were probably worth not much in excess of seventy per cent of par, and thus would have caused a huge loss to the banks. Furthermore, the privilege of issuing bank notes had been valued by the national banks not merely because it broadened their banking powers, but because it had an advertising value and heightened their prestige as compared with banks not enjoying note-issue powers. Therefore, the Federal Reserve Act resorted to a compromise—in principle it would establish a uniform and elastic bank-note currency, but in practice it would permit the national banks for a time to retain the note-issuing power and to transfer it gradually, without loss to the investment value of their bonds, to the federal reserve banks. The process was to be as follows.

After two years from the passage of the Federal Reserve Act, and at any time during the period of twenty years thereafter, any national bank desiring to retire its notes might file with the Treasurer of the United States an application to sell for its account, at par, United States bonds securing the notes to be retired. These bonds were then to be purchased by the federal reserve banks in proportion to the capital and surplus of the respective reserve banks, the total amount to be purchased not to exceed, however, \$25,000,000 a year. The reserve banks were then to be permitted to issue federal reserve bank notes to the amount equaling the

par value of the bonds purchased, the bonds being deposited with the Treasurer of the United States to secure the notes issued. These federal reserve bank notes were to be the direct obligation of the reserve banks issuing them, and were to be in all respects quite like the old national bank notes, except for the change in the nature of the bank issuing them.

The reserve banks, while permitted, were not required, to issue notes to the full amount of the bonds purchased from the national banks in the manner just described. They were given the option of exchanging the two per cent bonds bought, and against which no notes had been issued, for three per cent thirty-year government bonds to an amount not exceeding half of the bonds tendered for exchange, and the rest for one year United States notes, the reserve banks binding themselves, however, to purchase at maturity of the one-year notes an equal amount of new one-year notes, and so again and again for a period of thirty years. In short, what all this amounted to was that the Government, through the instrumentality of the reserve banks, undertook to relieve the national banks of the burden of their investment in overvalued government bonds, and to relieve the reserve banks in turn of this burden, if they did not wish to issue federal reserve bank notes, by exchanging for the overvalued two per cent bonds, thirty-year three per cent bonds and one-year notes worth as pure investments approximately their par value.

It is curious and unfortunate that this roundabout and complicated and, as it has turned out, ineffective, method of getting rid of the national bank notes was used. The purpose in view might have been achieved much more simply and effectively by requiring the national banks to exchange their two per cent bonds for new three per cent bonds without the circulation privilege. By this method the national bank notes might have been retired without injecting into the currency a new and objectionable type of bank notes, not one whit better than the old bank notes they were intended to replace. Presumably underlying these provisions of the Federal Reserve Act was a desire to avoid creating the impression that any deflation of the currency was directly or indirectly contemplated by the act, to retain the good-will of the national banks by permitting them to retain their note-issue privilege, and to avoid legal complications that might arise through compulsory retirement of national bank notes. However this may be, the result was that the country was given, not a uniform and elastic bank-note currency, but three types of bank notes, issued under differing conditions, two of which were not responsive in quantity to the needs of business.

As might have been foreseen, the national banks have shown little desire to retire their notes, and the amount in circulation remained around

\$600,000,000 to \$700,000,000 from 1913 down to 1932, when under pressure of panicky banking conditions an amendment to the Federal Reserve Act made possible a great expansion in the amount that may be issued.

6. FEDERAL RESERVE BANK NOTES AND THE PITTMAN ACT

Since not many national bank notes were retired, it follows that not many federal reserve bank notes were issued under the original provisions of the Federal Reserve Act. But the existence of this type of bond-secured federal reserve bank notes prepared the way for a thoroughly bad piece of legislation — the Pittman Act, a brief consideration of which is perhaps in order at this point, although it represents somewhat of a digression from the main thread of our discussion.

Under the provisions of the Pittman Act of April, 1918, the issue of federal reserve bank notes was considerably expanded, and on an entirely new basis. During the World War the price of silver, like the price of other commodities, rose far above the pre-war level, and at the same time troublesome financial conditions developed in India, where the silver money constituting the cash reserve against bank-note issues was being withdrawn by presentation of notes for redemption, and hoarded. The British Government was eager, therefore, to buy silver, and the greatest available supply in the world consisted of the hundreds of millions of silver dollars held in the United States Treasury as a relic of the unsound Silver Purchase Acts of 1878 and 1890. The condition was ripe for a mutually advantageous bargain. The United States could sell its practically useless silver hoard at original cost or even at a profit, at the then existing market price for silver, and the British Government would be relieved of an embarrassing situation resulting possibly in revolution in India.

But two obstacles stood in the way of this advantageous deal. The silver interests in the United States opposed any government transaction which, by increasing the available supply of silver in the world markets, would prevent a further rise in price, and the inflationists, whom we always have with us, opposed any contraction in the money in circulation. Now, selling of the Treasury silver would not only have increased the supply of silver on the world market, but would have involved some contraction of the currency if some provision had not been made for substituting other forms of currency for the silver certificates which would have to be retired when the silver dollars which they represented were sold. The British did not contemplate paying in gold for the silver. A typical compromise was, therefore, arranged. The inflationists were appeased

by a provision of the Pittman Act which required the federal reserve banks to issue federal reserve bank notes, secured by government bonds, equal in amount to the silver certificates retired. The silver interests were satisfied by the curious provision that the Treasury would obligate itself to purchase later from the silver mine-owners of the United States, at one dollar an ounce, as much silver as it now sold to the British Government, with a consequent expansion of the amount of silver dollars or silver certificates in circulation.

Thus an opportunity to rid the monetary system of the United States of several hundred millions of dollars of credit currency in the form of silver certificates and to recoup its losses on its purchases of silver during the period from 1878 to 1893 was foregone for the political purpose of subsidizing the silver interests further, and of forcing large quantities of federal reserve bank notes into circulation when inflation of the currency was already proceeding apace through the necessities of war finance. Under the provisions of this act approximately \$261,000,000 of federal reserve bank notes were issued to replace about the same amount of silver certificates temporarily retired. Later, when silver was repurchased at the artificial price of one dollar an ounce, far above the market price, the silver certificates were restored to circulation, while the federal reserve bank notes were retired. This process is reflected in the following Treasury statistics:

	Silver Certificates in Circulation	Federal Reserve Bank Notes in Circulation
June 30, 1917	\$468,400,000	\$3,700,000
December 31, 1919	149,527,000	261,039,000 *
June 30, 1920	97,600,000	185,400,000
June 30, 1923	364,300,000	20,000,000

* December 26, 1919

By the middle of 1923 the purchase of silver and the consequent retirement of federal reserve bank notes issued under the Pittman Act was complete. Later, the amount of these notes in circulation declined further until at the end of 1931 the amount in circulation was only \$2,838,000, as against \$2,603,454,000 of federal reserve notes, and \$656,404,000 of national bank notes. In 1933 further provision was made for the expansion of federal reserve bank notes, and this will be discussed in Chapter XXVIII.

7. RESTRICTIONS ON LOANS TO MEMBER BANKS

In the foregoing sections we have observed how the Federal Reserve Act of 1913 limited the amount of credit that federal reserve banks could

extend to member banks by various restrictions on note issue, particularly by the provision that federal reserve notes should be issued by the Federal Reserve Board to the reserve banks only on condition that the latter present to the agent of the Board collateral in the form of eligible commercial paper, to the amount of one hundred per cent of the amount of notes issued, and in addition forty per cent of that amount in gold. This 40 per cent minimum gold reserve provision was made more effective by the further provision that this gold must be in addition to a minimum of 35 per cent in gold or lawful money held by the reserve banks against deposits. In this section will be considered the provisions of the Federal Reserve Act restricting, not the quantity of reserve bank credit, but the avowed purposes for which it might be extended to member banks in discounting or rediscounting operations.

As already indicated, when the Federal Reserve Act was passed, it was the opinion of legislators acting under expert banking advice that reserve bank credit should be extended to member banks primarily only for the purpose of financing the customers of the latter for short terms in their agricultural, commercial, and industrial activities. It was believed, erroneously as we shall see, that this end could be achieved by restrictions laid upon the types of commercial paper made eligible for discount by the federal reserve banks. Under the original act, the reserve banks were not permitted to lend directly to the member banks by discounting the latter's own promissory notes, since these notes did not bear upon their face any evidence that the proceeds were to be used for financing the short-term business requirements of the banks' customers, and were not to be used for purely investment or speculative purposes either by the banks themselves or their customers. On the contrary, the reserve banks were to make advances to the member banks only by rediscounting for them credit instruments which the latter had discounted for their own customers — credit instruments of such a character as to give evidence on their face of having been used to finance legitimate short-term business transactions. What these credit instruments were considered to be is indicated by the following quotation from Section 13 of the Federal Reserve Act as originally passed in 1913:

Upon the indorsement of any of its member banks, with a waiver of demand, notice and protest by such bank, any Federal reserve bank may discount notes, drafts, and bills of exchange arising out of actual commercial transactions; that is, notes, drafts, and bills of exchange issued or drawn for agricultural, industrial, or commercial purposes, or the proceeds of which have been used, or are to be used, for such purposes, the Federal Reserve Board to have the right to determine or define the character of the paper thus eligible for discount, within the meaning of this Act. Nothing in this Act contained

shall be construed to prohibit such notes, drafts, and bills of exchange, secured by stable agricultural products, or other goods, wares, or merchandise from being eligible for such discount; but such definition shall not include notes, drafts, or bills covering merely investments or issued or drawn for the purpose of carrying or trading in stocks, bonds, or other investment securities, except bonds and notes of the Government of the United States. Notes, drafts, and bills admitted to discount under the terms of this paragraph must have a maturity at the time of discount of not more than ninety days: Provided, That notes, drafts, and bills drawn or issued for agricultural purposes or based on live stock and having a maturity of not exceeding six months may be discounted in an amount to be limited to a percentage of the capital of the Federal reserve bank, to be ascertained and fixed by the Federal Reserve Board.

Any Federal reserve bank may discount acceptances which are based on the importation or exportation of goods and which have a maturity at time of discount of not more than three months, and indorsed by at least one member bank. The amount of acceptances so discounted shall at no time exceed one half the paid-up capital stock and surplus of the bank for which the rediscounts are made.

The aggregate of such notes and bills bearing the signature or indorsement of any one person, company, firm, or corporation rediscounted for any one bank shall at no time exceed ten per centum of the unimpaired capital and surplus of said bank but this restriction shall not apply to the discount of bills of exchange drawn in good faith against actually existing values.

Any member bank may accept drafts or bills of exchange drawn upon it and growing out of transactions involving the importation or exportation of goods and having not more than six months sight to run; but no bank shall accept such bills to an amount equal at any time in the aggregate to more than one half its paid-up capital stock and surplus.

Leaving for later consideration the various important modifications in this part of the Federal Reserve Act, we may note the meaning and purpose of the provisions just quoted, assuming no greater degree of familiarity with banking terms and operations on the part of the reader than he may have gained by reading earlier chapters of this book. The terms "drafts" and "bills of exchange" as used in the act are synonymous, both terms being used in the tautological way typical of legal phraseology. The term "notes" means promissory notes. "Discount" means, in effect, to buy at a discount representing the current rate of discount or interest from the date of purchase of the note or draft in question to its date of maturity. The term "rediscount" refers to the discounting of paper which has previously been discounted. A member bank, for instance, discounts its customer's note, and then offers the note to its reserve bank to be rediscounted. From the point of view of the reserve bank, however, this operation is considered merely a discount; it is only from the point of view of the member bank that it represents a rediscount. By endorsing its customer's notes which it rediscounts with the

federal reserve bank, as required, the member bank, of course, makes itself liable for payment of the note to the reserve bank if the customer himself defaults. Except for this contingent liability the rediscount might be considered a sale pure and simple. The member bank is, however, held to be in debt to the reserve bank by the amount of such notes discounted for it by the reserve banks until they are paid.

The phrase "with a waiver of demand, notice, and protest," found in the foregoing quotation from the law, represented merely a legal precaution designed to save the reserve banks the trouble of meeting certain legal formalities as a condition of holding the member banks liable for payment of notes endorsed and rediscounted by them.

It may be observed that, while the provisions of the Federal Reserve Act quoted here were based on the assumption that the reserve bank discounting operations could in a measure be retained within safe channels by laying down limitations on the type of paper discounted, the Federal Reserve Board was given the right to determine or define the paper eligible for discount within the limitations laid down by law. It cannot be said, therefore, that the framers of the law had unlimited faith in the power of legal phraseology to create a good banking system without regard to the judgment and discretion of the banking officials. Nevertheless, the lawmakers did rely, as previously indicated, too largely upon the power of words to cause reserve bank credit to flow only in safe channels of short-term commercial loans, and not to overflow these channels into the wide bottom lands and swamps of capital investment and speculation, there to become dissipated, stagnant, or frozen. Having this undue faith in the power of legal provisions aided by discretion on the part of banking officials to keep reserve bank credit in its proper channels, the framers of the law omitted to take the safer and sounder precaution of limiting the quantity of such credit to an amount which might be calculated not to permit wild orgies of speculation in real estate and securities.

8. TERMINOLOGY AS A GOVERNOR OF SOUND BANKING PRACTICE

In respect to the faith in terminology as a governor of sound banking practice we may note that there was some argument in 1913 as to whether reserve banks should be permitted to rediscount for member banks the ordinary promissory notes which the latter had discounted for their own customers, despite the fact that such promissory notes had for a half-century been the most common credit instrument used in the United States in making short-term bank loans for agricultural, industrial, or commercial purposes. It was held in some quarters that such notes gave

no evidence in their form that the proceeds were to be used or had been used for such purposes — the borrowers might have obtained the loan to buy an automobile, to invest in real estate, or to speculate in stocks. Trade acceptances and bankers' acceptances, it was held in these quarters, offered a much sounder basis of extension of reserve bank credit because, it was argued, they bore upon their face evidence of actual business transactions which would presumably in the process of a short time provide the funds out of which the loan might be liquidated.

The reader will recall, from our discussion of domestic exchange in an earlier chapter, that the trade acceptance is a commercial draft drawn by the seller of goods against the buyer and accepted by the latter. When drawn and accepted in legitimate transactions, it represents the obligation to pay, usually within a few months, of both the buyer and seller, but primarily of the buyer, who may reasonably be expected to meet payment out of the money to be received in a short time for the goods which he has bought to be sold at a profit. Manifestly, if the trade acceptance were of such a nature that it could not be created except in this legitimate way, it would be a better credit instrument than a promissory note which might represent merely an accommodation loan or a speculative venture. But in practice a trade acceptance may be created in quite other ways. It may be used, for example, by a seller trying to induce a reluctant buyer to pay a past-due account, when the buyer has long since sold the goods represented by the account and dissipated the proceeds. Even worse, the trade acceptance may be created for the purpose of perpetrating outright frauds, and will be so used if the banks exhibit naïve faith in the power of mere form of the credit instrument to insure payment and fail to make the necessary careful examination into the good faith and ability of both the drawer and acceptor. When, however, such an examination is made, the trade acceptance may offer advantages over the promissory note signed only by the seller or buyer, with perhaps an accommodation endorsement to permit it to pass as two-name paper. It does represent on its face more clearly the purpose for which drawn than does the promissory note, and offers the bank discounting it a better opportunity to check up on the alleged transaction if it desires to do so. Nevertheless, what the bank needs to observe most carefully is the financial position and business reputation of the makers of the promise rather than merely the form in which the promise is made.

Whether or not the trade acceptance has any inherent points of superiority over the promissory note, its advocates argued strongly in its favor, and maintained for some time before and after the establishment of the

Federal Reserve System a persistent propaganda in its favor. While they did not succeed in barring the promissory note from the rediscount privilege at the reserve banks, they did manage to obtain for the trade acceptance a favored position in the law, and to secure special consideration for it from the Federal Reserve Board after the law was in operation.

CHAPTER XXI

FUNCTIONS OF THE FEDERAL RESERVE SYSTEM (*continued*)

1. THE TRADE ACCEPTANCE UNDER THE FEDERAL RESERVE SYSTEM

ALTHOUGH the trade acceptance, as such, was not specifically mentioned in the Federal Reserve Act, it was covered by the term "drafts, or bills of exchange," and, by virtue of this fact, favored along with bankers' acceptances over the promissory note in this respect: Drafts and bills of exchange may not only be discounted for member banks at their request, but may also be bought by the federal reserve banks in the open-market operations presently to be discussed, a privilege denied to promissory notes.

It happened, however, that while both types of acceptances were given preferential treatment in the Federal Reserve Act of 1913 in respect to open-market operations of the reserve banks, neither of these credit instruments had been widely used in the United States at the time the Federal Reserve System was established. The main reason why trade acceptances had not been widely used was that American business men had preferred to use the promissory note in financing current business operations. Short-term credit transactions in the United States had customarily been financed as follows:

Wholesalers and manufacturers sold goods to their customers on the basis of a nominal price named in the invoice, to be paid in full within sixty or ninety days, but subject to a discount of two per cent or more for cash, which meant ordinarily payment by check within ten days from receipt of the invoice by the buyer. Under these conditions no trade acceptances would come into existence — the time of payment and the amount of payment both being uncertain, a negotiable draft could not be drawn. Instead of drawing a draft against the buyer, the seller charged the amount on open book account against the buyer. If the latter elected to take advantage of the cash discount, which he usually did if in sound financial condition, he borrowed the amount required, if he had insufficient funds of his own, from his local bank, the cost of this loan being considerably less than the amount of discount offered for cash payment.

As for the commercial banks, they had no great incentive to encourage the use of the trade acceptance. There was no broad rediscount market for trade acceptances under the National Banking System any more than for promissory notes. The discounting bank ordinarily held either

type of paper until maturity. There was no central bank which would discount these credit instruments for commercial banks, and for any bank to attempt to discount them with other banks was considered a sign of financial weakness to be avoided except in serious emergencies. For secondary reserves to be utilized as a source of ready cash, the banks preferred call loans and bonds listed on the New York Stock Exchange.

After the establishment of the Federal Reserve System, the Federal Reserve Board, impressed with the arguments of the trade acceptance devotees, took steps to secure a wider use of this form of paper by granting for some time a lower rate of discount at the federal reserve banks on trade acceptances than on promissory notes. To enjoy this special favor the trade acceptances had to meet special qualifications, particularly the qualification that they be drawn on account of indebtedness created by the transfer of goods and for no other reason.

Despite the arguments favoring the use of the trade acceptance broadcast over the land by the National Acceptance Council, an organization formed for this special purpose, and the encouragement extended by the Federal Reserve Act and the Federal Reserve Board, the trade acceptance has failed to develop into an important part of our financial system, but has remained a puny, shrinking thing, like a young tree uprooted from its natural habitat and planted in alien soil and hostile climate, where it has failed to take root properly and thrive. At the end of 1931, for example, the total amount of trade acceptances held by the federal reserve banks amounted to only \$2,355,000 out of a total of discounted bills held of \$638,293,000. The latter figure does not include bills bought in the open market, held by the reserve banks, amounting to \$338,687,000, and including no trade acceptances at all. That is to say, trade acceptances constituted less than one quarter of one per cent of all bills held by reserve banks at this time, whether discounted for member banks or bought in the open market. So this infant, born in 1914, though spoon-fed and cradled with care for seventeen years, in 1931 still remained a midget.

This result is the more striking when it is considered in connection with the fact that the law lays no restriction either upon the amount of trade acceptances which a member bank may discount for any one customer nor upon the amount of acceptances discounted for any one customer which it may rediscount at its reserve bank, provided these trade acceptances are *bona fide* bills of exchange drawn against actually existing values, or business paper actually owned by the person, firm, or corporation negotiating the same. Such trade acceptances fall outside the general restriction of the law which limits the total amount of advances by

any member bank to any one person, firm, or corporation to an amount not exceeding ten per cent of the capital stock and surplus of the bank, and places the same limit upon the amount of such paper bearing the signature or endorsement of any one person, firm, or corporation which a member bank may rediscount at its reserve bank.

2. THE BANKERS' ACCEPTANCE BEFORE 1913

The bankers' acceptance, like the trade acceptance, was given a preferential position over promissory notes by the Federal Reserve Act, and with better reason and more encouraging results. The bankers' acceptance, the reader will recall, is a time draft drawn on a bank by a person, firm, or corporation other than a bank, and accepted by the bank on which drawn. It thus becomes the obligation of the accepting bank, and if this is a reputable institution, the acceptance is entitled to a high credit rating, and this it enjoys in banking communities which have grown accustomed to its use. Unlike the trade acceptance, the bankers' acceptance is clearly a higher type of credit instrument than the promissory note, for the same reason that a bank draft, or a certified check, is more highly rated than an ordinary personal check.

Before the establishment of the Federal Reserve System the development of the bankers' acceptance in the United States was hampered, not merely by the indifference of the business and banking community and the lack of a broad rediscount market, but by positive prohibitions of its use found in the banking laws. Under the National Banking System national banks were not permitted to accept drafts. This power was withheld from them because it was believed that bankers' acceptances opened the way to unsound expansion of bank credit, and there was justification for this point of view. The reader should perhaps be reminded that the bankers' acceptance represents a method of extending bank credit which does not directly affect the accepting bank's reserve ratio, as does the discounting of a customer's promissory note or the purchase of a trade acceptance. The customer draws a draft against his bank, due, let us say, in ninety days, which the bank accepts, and thus guarantees to pay at maturity. But this draft, or acceptance, is then ordinarily sold to a dealer or to some other bank, and the proceeds turned over directly or indirectly to the drawer of the draft. The accepting bank neither advances any funds of its own nor of necessity increases its own deposit liabilities. Hence its reserve ratio is not affected by the operation. On or before the date of maturity of the acceptance the customer provides the bank with the funds with which to meet the payment due. In view of the fact that the safety of the National Banking System

was supposed to depend upon the rigid cash reserve provisions and the bond-secured note issues, both tending to prevent inflation, the prohibition of the use of the bankers' acceptance is easily understood.

Some state banks had the privilege of accepting drafts before 1913, but since no broad market existed for acceptances, they found comparatively little advantage in making use of this privilege. The scant use made of bankers' acceptances in the United States was in marked contrast to the extensive use of this type of paper in England and other foreign countries. In our chapter on central banks it was pointed out how useful the British found bankers' acceptances both in providing a sound type of secondary reserves for the banks and in promoting foreign trade. When the Federal Reserve Act was being drafted, a strong feeling existed in influential quarters that provision should be made under the new law for the development of the bankers' acceptance in the United States, to serve the same useful purposes that it had long served in European banking systems. It was believed that it would prove to be particularly useful in our foreign trade relations.

3. THE BANKERS' ACCEPTANCE AND FOREIGN TRADE

In financing our domestic trade our business men had not felt keenly the need of either the trade acceptance or of the bankers' acceptance, for the reason, already pointed out, that current short-term financing was customarily provided for by means of the promissory note representing a loan from the buyer's local bank. But it was otherwise with foreign trade. There were many importers who desired to import raw materials and other goods on credit conditions permitting the goods to be processed or resold before actual payment in cash had to be made. But normally exporters in such countries as Argentina, Brazil, China, and Japan did not care to extend credit on long terms to American importers, with no better security than the American importer's promissory note. What the foreign exporters wanted was either cash or a bank acceptance drawn on a reputable bank which they could discount at their local banks without trouble or delay. Since our banks generally had no power to accept such drafts, and since there was no broad market for them in the United States even when accepted, these foreign trade transactions before 1913 had normally been financed through the agency of British banks and acceptance houses.

An American importer, instead of arranging with a New York bank to accept drafts drawn against it by the exporter concerned, was compelled to have his bank make such an arrangement with its London correspondent bank. While this method was fairly satisfactory, it was open to two

important objections. In the first place, the importer had to pay a commission both to his own bank and to the London accepting bank. In the second place, he obligated himself, by his contract, to pay a specified sum when the draft matured, not in dollars to his local bank, but in pounds sterling to the London bank. In short, he had to be prepared to purchase a draft on London at the rate of exchange that prevailed when the draft matured, and should the rate on London have been higher than he expected it to be, the cost of his draft would have been correspondingly increased. Naturally he might at times have been favored by a downward swing in sterling exchange, but it was a burden, nevertheless, to be compelled to assume the risks of exchange fluctuations. He could, of course, have resorted to hedging operations in sterling exchange, but this would have involved additional expense.

A similar situation existed in respect to our export trade. An American manufacturer exporting a shipment of goods to Argentina, for example, might have drawn a draft against the buyer as a means of obtaining payment. But this draft, to meet the needs of the importer, had to be drawn with a maturity of perhaps six months, and it was difficult to find a buyer for it, even though it was accepted by the foreign importer and thus turned into a trade acceptance. If, however, the American banks were given the privilege of accepting drafts, the exporter's local bank might accept his draft drawn against it, on condition that he would turn over to it for collection the draft, with bill of lading and other shipping papers attached, which he had drawn against the foreign buyer. Under this arrangement the American exporter could obtain cash at once for his goods by discounting his bankers' acceptance in the open market, while his bank would be protected by its possession of the documented draft drawn against the foreign buyer, and the latter would obtain the necessary extension of credit permitting him properly to finance his business.

4: RESTRICTIONS ON THE USE OF BANKERS' ACCEPTANCES

A real need existed, therefore, for the development of the bankers' acceptance as a part of our banking mechanism, and certain provisions of the Federal Reserve Act undertook to meet this need. But because the fear of inflation through the medium of bankers' acceptances remained, the accepting of drafts by member banks of the Federal Reserve System and their discount by federal reserve banks was narrowly restricted in the Federal Reserve Act as enacted in 1913. The nature of the restrictions imposed is indicated by the following paragraphs relating to bankers' acceptances quoted from the law of 1913:

Any member bank may accept drafts or bills of exchange drawn upon it and growing out of transactions involving the importation or exportation of goods and having not more than six months sight to run; but no bank shall accept such bills to an amount equal at any time in the aggregate to more than one half its paid-up capital stock and surplus.

Any Federal reserve bank may discount acceptances which are based on the importation or exportation of goods and which have a maturity at time of discount of not more than three months, and indorsed by at least one member bank. The amount of acceptances so discounted shall at no time exceed one half the paid-up capital stock and surplus of the bank for which the rediscunts are made.

The foregoing provisions of Section 13 of the Federal Reserve Act guarded against undue expansion of bank credit through bank acceptances in two ways. First, they restricted the use of bank acceptances to foreign trade operations, and secondly, they restricted the amount of drafts that might be accepted by and discounted for a member bank of the Federal Reserve System to an amount equal to one half of its capital stock and surplus, a small fraction, it may be noted, of the total amount of loans a bank may conservatively make in the form of deposits subject to check. Aside from the fear of possible inflation through the unrestricted privilege of accepting drafts, there was a desire on the part of the authorities to proceed slowly with the development of this new type of paper, and to encourage its use only by the strongest banks in the system, which naturally included the large banks engaged in financing foreign trade.

By amendments to the law during the period 1915 to 1917, these restrictions were in part removed, so that after June 21, 1917, member banks might be authorized by the Federal Reserve Board to accept drafts up to one hundred per cent of their capital and surplus, and one half of this amount of bills might be based on domestic transactions. The law permitted member banks to accept drafts and bills growing out of four kinds of operations, as follows:

1. Transactions involving the importation or exportation of goods (originally permitted).

2. Transactions involving the domestic shipment of goods, provided that shipping documents conveying or securing title to the goods were attached at the time of acceptance.

3. Transactions involving the storage in warehouses of readily marketable staples, provided that warehouse receipts or other such documents conveying or securing title were attached to the drafts at the time of acceptance.

4. Transactions designed to furnish dollar exchange by the drawing of drafts by banks or bankers in foreign countries or dependencies of the United States.

Of these four types of transactions the first has already been discussed. In the case of the second type it is obvious that it would often be convenient to a domestic shipper of goods to draw against his local bank a draft which, when accepted by the latter, could be readily discounted at other banks. For one thing it would permit local banks to finance larger operations, in the crop-moving season, let us say, than they could finance by more direct advances of their own funds. Drafts accepted in one section of the country could be discounted in other parts of the country, and the available supply of banking funds thus distributed more equally over all sections of the country, or more nearly in proportion to business needs.

The power to accept drafts secured by warehouse receipts was intended to promote the orderly marketing of farm products, by permitting the owner to obtain temporary advances on such products stored in warehouses and thus to reduce the amount of necessitous selling at times when the market might be overburdened with supplies.

The power to accept drafts drawn for the purpose of providing dollar exchange was designed primarily to provide bankers in certain foreign countries or dependencies of the United States with balances in the United States against which they could draw dollar drafts to be supplied to their customers who had payments to make in the United States. This power was to be exercised under the supervision of the Federal Reserve Board, and the operations confined to localities where trade conditions make it specially desirable. Incidentally it tended to make the dollar a more popular means of international payment, and in some measure promoted American trade.

The rather broad powers of accepting drafts thus given to member banks under the law as amended, the power conferred upon the reserve banks to discount these acceptances for member banks and to buy them in the open market from member banks and other banking institutions, and the real purposes served by this type of paper, all tended to make the bankers' acceptance a popular form of commercial paper, and it has come into wide use in the United States. The policy of the Federal Reserve Board has been to favor it with low rates of discount, not only below the rate of discount charged to their customers by member banks, but also below the reserve banks' rate of discount on promissory notes discounted or rediscounted for member banks. Because of the danger of abuse and overexpansion of this type of credit instrument, favored by its low discount rate, the limit on the total quantity of bills which may be accepted by member banks remains at one hundred per cent of their capital and surplus. But as in the case of the amount of trade acceptances

which may be discounted, the amount of drafts which may be accepted by a member bank for any one person, firm, or corporation is not limited to ten per cent of its capital and surplus when the bank is secured by attached documents or some other security growing out of the same transaction as the acceptances.

How widely the bankers' acceptances have been used in recent years in the United States is indicated by the fact that the minimum amount outstanding at the end of any month in the seven years, 1925 to 1931 inclusive, was \$555,000,000 at the end of August, 1925, and the maximum amount was \$1,732,000,000, at the end of December, 1929. In every month from November, 1927, to November, 1931, the amount outstanding exceeded one billion dollars.

More of the bankers' acceptances outstanding have been based on imports or exports of goods than on domestic shipments and goods stored in warehouses in the United States. Comparatively few have been based on operations creating dollar exchange. The federal reserve banks have tended to hold a substantial proportion of all bankers' acceptances outstanding in the United States. At the end of December, 1931, for example, they held \$555,879,000, out of a total outstanding of \$974,059,000. What proportion of the total they hold depends upon credit conditions and credit policies of the reserve banks, which will be discussed later.

5. OPEN-MARKET OPERATIONS

Section 13 of the Federal Reserve Act made ample provision for advances of reserve bank funds to member banks through the discounting of notes, trade acceptances, and bankers' acceptances as described in preceding pages. Section 14, entitled, "Open-Market Operations," broadened the powers of the reserve banks by permitting them to deal, not only with member banks but also with non-member banks and banking institutions, with foreign banks, and with the Government. More particularly, Section 14 authorized the reserve banks to engage in the following operations:

1. To buy and sell in the open market, at home and abroad, cable transfers, bankers' acceptances, and bills of exchange (including trade acceptances) of the kinds and maturities eligible for discount under Section 13, as previously described.

2. To buy and sell, at home and abroad, gold coin and bullion.

3. To buy and sell, at home and abroad, bonds and notes of the United States, and bills, notes and warrants, with a maturity not exceeding six months, issued by states and municipalities of the United States in anticipation of receipts of revenue.

These open-market operations were expected to achieve several important purposes. They would enable the reserve banks to find profitable uses for funds not employed in making advances to member banks under the discounting provisions of Section 13, and thus to cover their necessary expenses of operations when the demand for discounts by member banks was small. This was considered politically expedient because it would prevent the federal reserve banks from becoming a charge upon the Government, and it would prevent dissatisfaction on the part of member banks if the capital they had been compelled to invest in the reserve banks did not earn at least the fair return of six per cent permitted by law.

The power given to the reserve banks to buy and sell bankers' acceptances and trade acceptances in the open market would permit them to take an active part in developing a market for these two classes of paper, and thereby make them more popular instruments of investment among the commercial banks, both member and non-member banks. As we have seen, however, only the bankers' acceptance actually became popular, the trade acceptance failing to thrive because it served no important purpose.

6. CREDIT CONTROL THROUGH OPEN-MARKET OPERATIONS

Finally, the open-market operations were expected to give the reserve banks more effective control over expansion and contraction of credit than they could exercise merely through discounting for member banks at the latter's request. In open-market operations the reserve banks may take the initiative; in the discounting operations under Section 13, they cannot take the initiative, but must await action by the member banks. The full possibilities as well as the limitations of credit control through the open-market operations were probably not clearly understood at the time the law was enacted in 1913, but, briefly stated, this control can be made effective as follows:

If the member banks are inclined to extend too much credit to their customers, and to invest too heavily in securities on their own account, and thereby threaten to inflate credit unduly, the reserve banks may sell on the open market government securities or bankers' acceptances previously acquired. The buyers of these securities or acceptances will ordinarily make payment by drawing checks against their bank accounts payable to the reserve banks. In the case of member banks this at once tends to reduce their "cash reserve" deposits with the reserve banks, and when these fall below the legal minimum they have to be replenished either by borrowing from the reserve banks or by deposit of funds drawn

from other sources. If the member banks turn to the reserve banks for loans, the reserve banks may raise their rediscount rate so high as to make borrowing so costly to the member banks as to cause them in some measure to reduce such borrowing, and to strengthen their own position by calling loans or liquidating investments.

In this connection a fallacious view has gained more or less credence, namely, that the reserve banks must raise the discount rate very high to discourage borrowing by member banks. This erroneous view is based upon the fact that loans made in the form of deposits subject to check in the reserve banks may be counted as cash reserves by the member banks. Since the minimum reserve ratio of the member banks on the average is only 10 per cent on demand deposits, it is held that for every loan of \$1 that a member bank obtains in the form of deposit in its reserve bank, it may make a loan of \$10 in the form of a deposit subject to check to its own customer. On this basis, if the member bank charged its customers a rate of 6 per cent on their loans it could afford to pay as high as 60 per cent on its own advances from the reserve bank before these loans became unprofitable. Obviously, however, any member bank which acted upon this sort of reasoning and proceeded to expand its own loans on this tenfold basis would quickly exhaust its reserves at the reserve bank altogether, unless all other banks in the system were expanding their loans and investments at the same reckless pace on the average.

In actual practice every bank, if conservatively managed, must act on the assumption that any particular loan it advances to its customers in the form of a deposit subject to check will tend to result promptly in the loss of approximately that amount of cash directly or indirectly through unfavorable balances at the local clearing-house or the federal reserve bank. It cannot act safely on the assumption that other banks will expand loans sufficiently to increase its own deposits by an offsetting amount. When once its reserves at the reserve bank are down to the minimum, a member bank must consider that it will be compelled to borrow one dollar at the reserve bank for every additional dollar it lends to its own customers, although, of course, if it could count confidently upon other banks proceeding with loan expansion at a rapid pace, this result would not follow. It is unnecessary to develop the reasoning on this point further, since it involves the principles of loan expansion discussed at length in an earlier chapter. It will suffice to point to the conclusion indicated, namely, that a rediscount rate as high as the member bank's own rate of discount is normally sufficient to discourage further expansion necessitating advances from the reserve bank.

A tradition which has developed, not without encouragement from

without aid from the reserve banks, and unless the reserve banks have large quantities of government securities and acceptances on hand, they are powerless to check such expansion by open-market operations. As we shall see in the following chapter this condition actually developed early in the history of the Federal Reserve System.

Again, although the reserve banks can inject currency into circulation and increase the excess reserves of the member banks by buying securities and acceptances in the open market, they cannot by this means do more than encourage or make possible expansion of member bank loans and investments. They cannot force the member banks to lend and invest nor their customers to borrow. Neither individuals nor banks will borrow to invest or speculate willingly in a falling market. When prices tend to rise and the desire to expand business operations and to invest and speculate exists, open-market operations may be used effectively to further such desires; when prices tend to fall and neither banks nor individuals want to expand operations, easy money conditions and excessive bank reserves may be powerless to stop the decline in prices or to generate business, investment, or speculative activity. During the depression of 1930-1933, ample evidence accumulated to support this pessimistic conclusion.

Aside from the control exercised over credit expansion and contraction, with the limitations just noted, open-market operations may be used by the reserve banks for the purpose of bringing about some degree of uniformity in the bank discount rate over the country as a whole, particularly if differences in such rates exist, not because of differences in risks or costs of service, but merely because of differences in the relative abundance of banking resources. If, for example, the local bank discount rate in some southern or western state is considered too high relatively to the rates charged in other parts of the country — risk and costs of service being considered — the reserve banks may enter the money market in that section through their open-market operations, and, by offering to buy good paper based on agricultural, commercial, or industrial activities in that section, increase the local supply of funds and thus force down the rate of interest by entering into direct competition with the commercial banks. Obviously, some equalizing power might be supposed to be exercised by the reserve banks through their discounting operations under Section 13. But the mere fact that a reserve bank in the West or South offered to discount paper for member banks at a low rate would not necessarily induce the member banks to pass the benefit of the low rate on to their own customers.

Unfortunately, the reserve system has not functioned very effectively

in reducing the cost of loans to farmers and others in the West and South, and the reason has probably been that the high rates paid have represented largely compensation for risk and the labor costs of making loans in small amounts by more or less inefficient country banks. The remedy here seems to lie in more efficient local banking practices and better secured loans rather than in low rates on open-market operations of the reserve banks. What the farmer really needs is not more credit and more debts on easier conditions, but such a relation between price and costs of production that he will need less credit to cover the difference between expenses and the value of his product. Bad banking conditions are a result more than a cause of his economic difficulties.

8. CONTROL OVER IMPORTS AND EXPORTS OF GOLD

Finally, we must consider the open-market operations of the reserve banks in their relation to the international flow of gold. Having the power to buy gold and acceptances at home and abroad, the reserve banks can exercise very directly a control over the actual international flow of gold by accumulating balances of gold abroad, or by accumulating bills drawn on foreign countries which they may throw on the market when exchange rates move against the United States.¹ Indirectly they can exercise a more fundamental and important control over gold movements through their control over discount rates and commodity prices. If the reserve banks, acting in concert under the supervision of the Federal Reserve Board, make the reserve banks' discount rate and open-market rate the effective rate for the country, and if this rate is below similar rates in foreign countries, it will tend to stimulate exports of gold, since money tends to go where the higher yield may be obtained. If the domestic discount rate is raised above the foreign rates, gold will, on the contrary, tend to flow into the country. Thus, control over the discount rate gives a rather direct control over gold imports and exports.

Less directly an even more important effect may be produced. If the high discount rate, and consequent restriction of bank credit, forces some restriction of business activity and liquidation of loans and investments and lower commodity prices, it tends to increase exports and to decrease imports, and thereby, through its effect on foreign exchange rates, tends to encourage imports of gold and to discourage exports of gold. A contrary result tends to flow from a lowering of the discount rate if conditions generally are favorable to an expansion of business and rising prices.

¹ Under the Gold Reserve Act of January 30, 1934, to be discussed in Chapter XXIX, the power of the federal reserve banks to buy, hold, and transport gold was made subject to conditions prescribed by the Secretary of the Treasury.

If, however, as previously indicated, expansion of credit should be permitted to generate, not more active business and higher commodity prices, but merely an orgy of speculation in securities and real estate, instead of developing an unfavorable balance of trade as the result of large imports of commodities, we may develop a favorable balance of trade as a result of the invisible exports of stock-market securities when foreigners yield to the lure of possible speculative profits on our market. Instead of an outflow of gold resulting from easy money and credit expansion, we may then have an inflow as foreigners compete with our own speculators for a place on the speculative band-wagon.

9. CLEARING-HOUSE FUNCTIONS OF THE FEDERAL RESERVE SYSTEM

In our chapter on Domestic Exchange have already been described in some detail the clearing-house operations of the federal reserve banks.¹ The reader will recall that under the system of clearing and collection developed by the Federal Reserve System each reserve bank acts as a clearing-house for member banks of its district and for such non-member banks as elect to clear through the reserve bank, and maintain a deposit with the bank for this purpose. He will recall also that the gold-certificate settlement fund established at the United States Treasury, under the supervision of the Federal Reserve Board, provides the twelve reserve banks with a clearing-house of their own, through which the sums they owe one another may mutually be cancelled, and that through the functioning of this system clearing and collection of checks and drafts over the whole country has become an extraordinarily simple, efficient, and economical process. Our earlier discussion of this subject needs to be supplemented, however, in respect to some points not yet considered.

It is obvious that the highest degree of efficiency in this system of clearing and collection of checks and drafts would be reached if all commercial banks in the country were member banks of the Federal Reserve System, and if all member banks not only sent in to their reserve banks for collection checks received on other banks, but promptly remitted at par for checks drawn upon themselves and returned to them for collection by the reserve bank of their district. Under these ideal conditions any person in the United States receiving a check drawn on any bank in the country might deposit this check to his account in his local bank, and either receive credit for the check at par at once, or credit deferred for such a period as were required for collection through the reserve bank. The local bank would then send the check to the reserve bank of its district to be credited to its own account, this credit to be deferred, however,

¹See pages 299-302.

until the reserve bank had had time to communicate with the drawee bank. In case the check turned out to be bad, credit would, of course, not be allowed. In the case of a good check, the drawee bank would remit to the reserve bank at par. Remitting at par means merely paying the check at par. Payment to the reserve bank might be made by the drawee bank in various ways — by authorizing the reserve bank to deduct the amount from its reserve account, by a draft on this account, or by an acceptable draft on some other bank, or by shipment of federal reserve notes or other actual cash. In the case of a check drawn on a member bank of one reserve bank, and deposited in a member bank of another reserve bank, the process of clearing would involve, as previously indicated, the dispatching of the check by the second reserve bank to the first, but otherwise the process would be the same as in the case of intra-district clearing and collection.

Under these ideal conditions a check drawn on a bank in any part of the country would be just as good in any other part of the country as in the locality of the bank on which it had been drawn, except for the possibility that the bank in which it had been deposited for credit might defer credit during the interval of collection — at the most, merely for a few days. The expense of collection would be so small that the banks would have no good excuse for charging "exchange." It must be borne in mind that very little cash would ever need to be transferred from one part of the country to another, either by the member banks or by the reserve banks. A member bank would ordinarily receive in the course of an average day's business as many checks to be sent to its reserve bank and credited to its account as the amount of checks charged against its account by the reserve bank and sent to it for collection. Unless it were banking beyond its means, it would have no persistent unfavorable balance at the reserve bank — its clearing-house. As for balances to be settled among the reserve banks, the sums due to and from one another would tend largely to offset each other, and no large shipments would normally need to be made.

10. THE PAR COLLECTION CONTROVERSY

This ideal state of affairs has, however, not been realized in full, although realization has been almost complete. In the first place, not all commercial banks have been able and willing to become members of the Federal Reserve System. And the provision made in the law permitting non-members bank to clear through the reserve banks has not appealed to all of them. Non-member banks, of course, have no serious objection to sending checks on other banks to the reserve banks for collection, al-

though they may prefer in some cases to collect through other correspondent banks. What the non-member banks have objected to is the requirement that banks clearing through the reserve banks remit at par on checks returned to them by the reserve banks, and make no deduction for exchange. Many non-member banks — usually small country banks — have objected to remitting at par because exchange charges have constituted a substantial part of their income. Naturally, there were some member banks who likewise objected to remitting at par. So long as payment of checks at par was not made compulsory, it was not to be expected that all banks would make payment in full on checks presented to them through the mail by the reserve banks.

This being so, the Federal Reserve Board resorted to compulsion. After July, 1916, all member banks were required to pay at par all checks drawn upon them and presented to them through the federal reserve banks of their respective districts. Then, under the provisions of several amendments to the Federal Reserve Act, in 1916 and 1917, the Federal Reserve Board undertook to make payment of checks at par compulsory upon non-member banks as well as member banks. These amendments extended the privilege of clearing through the reserve banks to non-member banks, authorized each federal reserve bank to receive for collection from commercial banks and from other reserve banks checks or drafts on any bank in its district, and made it unlawful for any bank, whether member or non-member, to make exchange deductions on checks drawn against it and properly presented for payment by reserve banks. Receipt of checks drawn against it from the reserve banks by mail was to be considered equivalent to presentation of such checks at the counter of the drawee bank.

Attempts of the reserve banks to put the system of compulsory collection at par into operation aroused a storm of protest among the banks in some of the Western and Southern States, and a struggle developed between the reserve banks and non-member banks in these states similar to the struggle a century before between the Second Bank of the United States and the state banks — with the difference that then the state banks resented being compelled to redeem their notes at par, and now they resented being compelled to pay their checks at par. The banks refusing to remit at par by mail, the federal reserve banks employed agents to present large batches of checks across their counters. The state banks fought back and state legislatures passed laws authorizing state banks to charge exchange even on checks presented at their counters when presented by agents of a federal reserve bank. The controversy was carried into the courts, and was finally fairly well cleared up by

decisions of the United States Supreme Court, the state banks winning at least a partial victory. The Supreme Court upheld the power of the reserve banks to collect at par from member banks without qualification, but it held that it was not permissible for the reserve banks to use coercive methods in compelling remittance at par by non-member banks.¹

While, under the protection of this court decision, the non-member state banks might have evaded the responsibility of remitting at par on checks drawn against them, and thus have greatly reduced the usefulness of the Federal Reserve System, only a small proportion of them have chosen to assert their rights to charge exchange, and those who have done so consist for the most part of small country banks of no great importance in the aggregate. At the end of 1931 there were 16,427 banks on the federal reserve par list, which comprises all member banks and such non-member banks as have agreed to pay, without deduction of exchange charges, such checks drawn upon them as are presented or forwarded for payment by the federal reserve banks. At the same time the number of banks not on the par list was only 3207, of which 1753 were located in the Southern and 1329 in the West-North-Central States and Wisconsin. In the Boston, New York, and Philadelphia districts all banks were on the par list.

It should perhaps be added that, not only do not all non-member banks remit at par to reserve banks, but some banks in various parts of the country still make charges for exchange in other ways. Banks in Colorado, for example, will not cash at par checks drawn on Eastern banks, when presented at their counter by other than customers. Some banks make a charge for New York drafts and for certification of checks. Such charges are essentially service charges and might as well be made to cover the expenses of any ordinary checking account, and more logically. They are not justified merely by the cost of transferring funds or maintaining deposits in other banks. The Banking Codes under consideration in 1934 include a variety of such service charges.

11. THE RESERVE BANKS AND GOVERNMENT FUNDS

In earlier chapters has been discussed the problem of handling government funds. The First and Second Banks of the United States served as fiscal agents of the United States Government, and in them the Government kept deposits. During the interval between the expiration of the charter of the First Bank in 1811, and the establishment of the Second Bank in 1816, and again for a time after the expiration of the charter of the Second Bank, the Government made some of the poorly regulated

¹ Details of this par-collection controversy will be found in Spahr, *The Clearing and Collection of Checks*; also in the *Annual Reports* of the Federal Reserve Board.

state banks its fiscal agents. This turned out to be a very unwise arrangement. Government deposits became a football of politics, and political expediency determined largely the choice of banks to serve as government depositories. The government funds were utilized by the depository banks as the basis of reckless speculation, and in time of crisis the banks suspended payment and left the Government without adequate funds.

As a result of these troubles and in the absence of a strong central bank to serve as fiscal agent for the Government, the Independent Treasury System was established. Payments to the Government, instead of being paid into a bank, were made in cash directly to the Government, either at the Treasury in Washington or at various sub-treasuries established in other cities scattered over the country. While this guaranteed the Government against loss, it had a bad effect on the banking system and on business. When government receipts exceeded expenditures cash was drained out of circulation and the banks into the Government Treasury. When expenditures exceeded receipts, the cash was pumped out again into circulation. This ebb and flow of government funds out of and into the Treasury and sub-treasuries, and the consequent alternate expansion and contraction of the quantity of money in circulation, was a breeder of speculative excesses and financial crises, and was a prime cause of the suspension of specie payment by the banks early in the Civil War, as described in another chapter. After the Civil War some modification of the Independent Treasury System was made, and resort was had once more to a limited number of depository banks, again with unsatisfactory consequences.

Under the Federal Reserve System the problem of what to do with government funds has been satisfactorily solved. The reserve banks have been made the chief depositories of United States funds, although national banks still retain some government deposits. The sub-treasuries have been closed. The Government now makes and receives payment by check. When an individual, for example, pays his income tax, he writes a check in favor of the United States Government, or its agent, and this check will be deposited with a federal reserve bank to the credit of the Government. If the drawee bank is a member bank, the amount will be deducted from its balance with the reserve bank. If the bank is not a member bank, the check will be collected in the usual way, previously described. Under this system, the operations of the Government do not expand or contract the available quantity of money in circulation or the amount of bank credit as a necessary result of differences in government receipts and expenditures. If excess receipts of the Govern-

ment drain funds out of the member banks into the reserve banks, by that very fact the reserve banks are placed in a stronger position to extend loans to member banks if loans are required.

12. SUMMARY

In the present and preceding chapter have been discussed the functions which the Federal Reserve System, established under the Federal Reserve Act of 1913, was designed to perform. These functions included the issue of bank notes under conditions permitting expansion and contraction of the currency in conformity to the requirements of business; the centralization and mobilization of cash reserves in the interest both of economy and efficiency; the establishment of a broad discount market for promissory notes, trade acceptances, and bankers' acceptances, to the end that member banks might the more readily extend aid to their customers in time of need, and in time of crisis obtain aid for themselves through the conversion of secondary reserves into cash; centralization of control over the money market through the medium of open-market operations as a means of checking or encouraging expansion of bank credit; centralization of control over the importation and exportation of gold as a result of centralized control over credit; the establishment of satisfactory relations between the Government and the banking system; and finally the development of a nation-wide system of clearing and collection of checks and drafts, economical and efficient.

The structure and the functions of the banking system established under the Federal Reserve Act of 1913, on paper and in prospect, seemed excellent in most respects, although not perfect in all. There had been some compromises between sound banking theory and political expediency, but on the whole the creation of the Federal Reserve System was hailed by professional theorists in money and banking as a remarkable performance. The system was held to reflect credit upon its creators, and to give great promise of proving sound in practice and of reducing to a minimum the danger of future business crises and financial panics. In so far as our discussion of the performance of the system during its period of operation has proceeded up to this point, there is no occasion for pronouncing the high hopes entertained for the system at its inception as unjustified by the actual results. But so far we have been concerned mainly with a description of its structure and its functions as outlined by the law, and but little with the details of its operation. We have yet to consider how the Federal Reserve System has performed in the all-important matters of the control of bank credit and the maintenance of business and financial stability.

CHAPTER XXII

SETTING THE STAGE FOR INFLATION

1. SOUND BANKING STRUCTURE AND SOUND POLICY

IF NOTHING had been required for a good banking system in the United States except the creation of a central banking mechanism endowed with requisite powers by the law, then we should doubtless have enjoyed the benefits of a good banking system after the establishment of the Federal Reserve System in 1914. In structure and function as provided for by the Federal Reserve Act of 1913, our banking system left little to be desired except perhaps compulsory membership of state banks. Unfortunately, however, a legal enumeration of the proper functions and powers of a central bank or a group of central banks does not represent the creation of a sound banking policy, and a sound banking policy is as necessary to a good banking system as a sound structure and adequate powers. How the reserve banks, under the supervision of the Reserve Board, use their powers and perform their functions represents their banking policy, and so far as the provisions of the law are concerned, this policy may be good, or bad, or merely futile.

It would be a gracious and happy thing to say, now, that the policy of the Federal Reserve Board and of the federal reserve banks has been good, and that the banking system as a whole has been good since the new system was placed in operation, but it would not be true. The truth is, that, while the Federal Reserve System has functioned admirably in some respects most of the time, and in most respects part of the time, on the whole and in the most fundamental respects it has been a flat failure. It has succeeded in the little things, such as the economical clearing and collection of checks, but it has failed in the enormously more important function of maintaining safe and sound banking operations, and here it has failed more disastrously than the National Banking System which it superseded. It has saved the country some tens of millions of dollars in exchange charges, but it has cost the country some tens of billions of dollars by permitting in less than twenty years two disastrous periods of inflation necessitating as an inevitable result two periods of even more disastrous deflation. It has failed signally to meet the most important tests of a good banking system — safety, soundness, and stability.

This chapter and the three following chapters will be devoted primarily

to an analysis of the causes and the results of the two cycles of inflation under the Federal Reserve System. If it could be shown that both of these periods of inflation, followed by the inevitable periods of deflation, grew out of the operation of forces beyond the control of the Federal Reserve Board and the federal reserve banks, then we might conclude, not that the banking policies of the system were bad, but that the banking system had run afoul of such cataclysmic disturbances of world finance that its great powers and sound policies were rendered ineffective in fending off disaster. We might then view with satisfaction the fact that we had salvaged something from the storm, point with pride to our banking system, and liken it to a good stout ship whose sound timbers and skillful navigators had brought it safely into port, albeit sadly tattered and torn by wind and wave, while other vessels, less soundly constructed and less skillfully handled, foundered at sea or crashed on the rocks. But there is ample evidence leading to the conclusion that the financial storms which have well-nigh wrecked our banking system were in large measure brewed by the responsible banking officials themselves. They sowed the wind, and they reaped the whirlwind. If we may carry our figure of speech farther, we may say that the captain and the mates were given a good staunch ship, except for a few weak timbers, and one capable of riding out a great storm without disastrous consequences. But the officers were careless and lax in discipline. They dispensed intoxicating liquors too freely, and they permitted members of the crew to smoke among open barrels of powder, and it was internal explosions and reckless navigation and not the buffeting of wind and water that threatened to send the good ship to the bottom, and caused the loss of much of its cargo — thrown overboard in panic in the midst of the storm, to lighten the load.

2. INFLATION LIMITED UNDER THE NATIONAL BANKING SYSTEM

In Chapter XX on the Functions of the Federal Reserve System it was pointed out that the note-issue and discount powers of the federal reserve banks, together with the large funds placed under their control by the capital stock and cash reserve provisions of the Federal Reserve Act, give them tremendous capacity for inflation of the currency. It was also pointed out that the law undertook to limit somewhat their power unduly to expand credit by provisions designed, not only to limit the total amount of credit they could extend, but also to restrict the purposes for which the credit was to be used. Despite these restrictions, however, the federal reserve banks, under the supervision of the Federal Reserve

Board, were left with powers to inflate the currency far beyond the bounds of safe and sound banking. The new system substituted for the limited power of inflation of the National Banking System almost unlimited power; in large measure it substituted for rigid provisions of law the discretion of dominating officials of the Reserve Board and the reserve banks.

It will help the reader to a more complete understanding of this important subject if we summarize here the reasoning presented in our chapter on the Limits of Loan Expansion, as follows:

In a system of commercial banks, provided only that all banks expand loans at approximately an equal pace, loan expansion in the form of deposits subject to check may proceed until total loans and deposits are many times the cash reserves held by the banks — how many times depending upon what is considered a safe minimum cash reserve ratio. If ten per cent is considered a safe reserve ratio in law and in practice, then deposits growing out of loans, or loans growing out of deposits, may become approximately ten times as great as the amount of cash reserve held by the banks.

It does not follow that for every dollar of cash reserves held in excess of the minimum of ten per cent the banks can expand loans by the amount of ten dollars. If the expansion of loans involves increasing business activity, as it is likely to do, more cash will be required in circulation, and some part of the banks' reserves will be drained out of the banks into general circulation, particularly in connection with payroll and retail trade transactions. Consequently, the reserve ratio will fall, not merely because deposits are becoming larger, but because actual cash reserves are becoming smaller. The power of expansion represented by a given amount of excess reserves depends, not only upon the reserve ratio, but also upon the customary ratio between cash in circulation and bank deposits subject to check.

If banks have the power to issue bank notes to meet the demand for additional cash in circulation when loans expand, they can prevent the drainage of cash into circulation by paying out bank notes instead. But upon the amount of notes issued for this or other purposes there must also be a limit, either a limit imposed by law or by banking prudence, if eventual disaster in the form of suspension of specie payment is to be avoided. Experience has shown that banking prudence cannot ordinarily be depended upon to place safe limits upon note-issue expansion, and so commercial banks are given only limited note-issue power or are prohibited from issuing notes altogether. Even when central banks are established and given exclusive power to issue notes, their powers in this

respect are usually strictly limited. The lower the minimum reserve ratio is for commercial banks and the more freely these banks or their bankers' banks may issue notes, to be placed in circulation in the place of other money, the greater becomes the power for inflation of bank credit in the banking system as a whole, with a given amount of cash reserves and a given ratio of cash required in circulation to bank deposits subject to check.

Under our National Banking System as it existed just before the Federal Reserve System was established, it will be recalled, country banks were required to keep as a minimum cash reserves amounting to 15 per cent of deposits, reserve city banks 25 per cent and central reserve city banks 25 per cent. But the country banks were permitted to redeposit three fifths of their required cash reserves in reserve city banks or central reserve city banks, and reserve city banks were permitted to deposit half of their required reserves in central reserve city banks. The following table shows the total reserves required by three national banks, one of each class, on the assumption that each of the three had deposits of \$1,000,000.

CASH RESERVES REQUIRED PER \$1,000,000 OF DEPOSITS UNDER THE
NATIONAL BANKING SYSTEM

Class of bank	In its own vault	In other banks
Country bank.	\$60,000	\$90,000
Reserve city bank.	125,000	125,000
Central reserve city bank.	250,000	0
Total — three banks	<u>\$435,000</u>	<u>\$215,000</u>

Taking these three banks together, as representative of all banks of their class, their total true cash reserves were represented by the \$435,000 of reserves held in their own vaults. The other \$215,000 of reserves were fictitious or largely so, for the reason that the \$90,000 of reserves that could be deposited by the country bank in other banks might be included in the \$125,000 of reserves held in its own vault by the reserve city bank, or in the \$250,000 of cash reserves held by the central reserve city bank. Similarly, the \$125,000 of reserves that could be deposited by the reserve city bank in other banks might be included in the \$250,000 cash reserve item of the central reserve city bank. Actual reserve statistics under the national Banking System bear out the conclusions just reached. Disregarding, then, the \$215,000 item as wholly or mainly fictitious, we have left as actual minimum cash reserves against the \$3,000,000 of deposits of these three banks, \$435,000, or 14.5 per cent.

The total deposits of country banks were, however, substantially greater than the total deposits of the central reserve city banks, so that the average reserve requirements were actually lower than 14.5 — not far perhaps from 13 per cent.

If we add to the minimum cash reserves required of the national banks the amount of money in actual circulation outside the banks per dollar of deposits subject to check, we have the basis of a calculation of the expansion of bank credit permitted by a given amount of excess reserves held by national banks. The ratio between cash in actual circulation and demand deposits varies from time to time and is not accurately known for the double reason that neither the amount of money in circulation nor the total amount of bank deposits actually subject to check and payable upon demand is known. It has been estimated, however, that during the later years of the National Banking System and the early years of the Federal Reserve System, there was in actual circulation outside the banks about one dollar in cash for each six dollars of demand deposits.

On the basis of the 1 to 6 ratio, national banks, if they expanded loans and investments and deposits at an equal pace with all other commercial banks in the country, might expect to lose cash into circulation at the rate of $16\frac{2}{3}$ per cent of the amount of their increase in deposits. For every dollar of increase in deposits, therefore, they tended to use up approximately 30 cents in excess cash reserves — 13 cents being required on the average for required cash reserve and $16\frac{2}{3}$ cents being drained into circulation. Potential deposit expansion at any given time was, therefore, for all the banks in the system, approximately $3\frac{1}{3}$ times the amount of excess cash reserves held. Additional cash reserves received from any source, as through imports of gold, or domestic gold production, tended to increase possible deposit expansion to the extent of $3\frac{1}{3}$ times the amount of additional reserves received. Loan and investment expansion might have been somewhat greater since the cash drained out of the banks into circulation might have been paid out in the form of cash loans.

It is obvious from the foregoing calculations that under the National Banking System there was comparatively little power for inflation of bank credit except through enormous imports or domestic production of gold, large issues of bank notes or government paper money, or, of course, coinage of silver dollars. Even if expansion of the amount of money occurred in any of these ways, this expansion could be multiplied through the manufacture of bank credit but little more than three times. Even if we assumed a ratio of bank deposits to cash in circulation of 8 to 1 instead of only 6 to 1, the potential expansion of bank deposits would

have been only four times the expansion in the amount of money. That is to say, in this case, there would have been required for every dollar of additional deposits, $12\frac{1}{2}$ cents in circulation and 13 cents in cash reserve, or $25\frac{1}{2}$ cents.

Since by 1913, the last year of the National Banking System, greenbackism and bimetallism had ceased to be a menace, there was little danger of substantial expansion of the currency except from imports of gold and bank-note issue. But the issue of bank notes was narrowly restricted, first by the ten per cent prohibitory tax on state bank notes, and, second, by the provisions of the law compelling national banks to purchase United States bonds, bearing a low rate of interest and subject to a tax, to the full amount of the notes to be issued. Whatever may have been the defects of the National Banking System, the capacity for wild inflation of the currency was not among them.

3. ACTUAL EXPANSION UNDER THE NATIONAL BANKING SYSTEM; 1900-1913

The actual rate of expansion of bank deposits relatively to the increase in money in circulation and in bank reserves was considerably larger during the period 1900 to 1913 than the foregoing calculations indicated as a maximum. During this period the amount of money in circulation and in bank reserves increased from \$2,081,231,000 to \$3,418,692,000, an increase of \$1,337,461,000, primarily as a result of a great increase in the supply of gold. During the same period deposits of national banks, state banks, and trust companies increased in the aggregate \$7,863,000,000, or approximately six times the amount of the increase in money.

The ratio of increase of 6 to 1, as compared with our calculated maximum of 4 to 1, can be accounted for by three factors not taken into consideration in our previous calculations. In the first place, much of this increase in bank deposits was represented by the growth of deposits of state banks and trust companies which on the average had lower cash reserve requirements than the national banks. In the second place, during this period the use of checks instead of cash in making business payments was increasing, and the ratio of cash in circulation to the amount of bank deposits was declining, so that there might have been some expansion of bank deposits in the absence of any increase in the amount of money in circulation at all. Third, and perhaps most important, some part of this increase was represented by an increase in time deposits not subject to check.

The increase in the amount of money in actual circulation and in bank

reserves of 64 per cent and the greater increase in bank deposits of 166 per cent during this period resulted in an increase in the general level of prices of only about 33 per cent. This comparatively mild rise in prices is accounted for mainly by the rapid expansion in industrial production and the physical volume of trade.

4. SOURCES OF INFLATION UNDER THE FEDERAL RESERVE ACT

As against a normal potential expansion of credit by national banks of perhaps \$4 for every dollar of excess cash reserves held or acquired under the National Banking System, there was made possible, under the Federal Reserve System, an expansion of bank credit of at least \$10 for every dollar of excess cash reserves held by the reserve banks under the original law and of at least \$12 for every dollar of excess reserves held after the amendment relating to member bank reserves of June, 1917. It seems sometimes to be implied that the inflationary power of the Federal Reserve System was derived from the war amendments, in the nature of emergency measures, which were later not repealed, but this is an erroneous impression. The inflationary power, although later increased, was inherent in the Federal Reserve System from the very start. The sources of it were four, as follows:

1. The reduction in the cash reserve requirements of the member banks so that their actual and fictitious reserves combined were less than their minimum required actual cash reserves under the National Banking System.

2. The concentration of the member banks' actual cash reserves, at first in part, but later wholly, in the vaults of the reserve banks, together with the cash received from the member banks for subscriptions to the capital stock of the reserve banks.

3. The note-issue power of the reserve banks, permitting them to issue bank notes far in excess of the quantity of national bank notes under the old system.

4. The power of the reserve banks to create fictitious "cash" reserves for member banks by the process of counting as such reserves deposits credited to the account of the member banks as the result of discounting their commercial paper or of purchases of bills and securities in the open market.

It would not be too much to say that short of the resort to wild-cat banking, debasement of the metallic currency, or the issue of irredeemable government paper money, no more effective instrument for inflation could have been devised by the most irrepressible inflationist in history, and this was despite the fact that the Federal Reserve Act was for the most part in the hands of conservative legislators in the halls of Congress, while the inflationists were apparently cracking their cheeks in vain on the sidelines. One must hazard the guess that the responsible legislators were so impressed with the desirability of creating an elastic

currency, which at this time was a national obsession, that they left out of account that elasticity is an elastic term capable of embracing the concept of inflation.

5. THE REDUCTION IN REQUIRED RESERVES

Consider now the four sources of inflation, beginning with the first named. Under the complicated provisions of the Federal Reserve Act as first enacted, the required reserves of the three classes of member banks were as indicated in the following table:

CASH RESERVES REQUIRED PER \$1,000,000 OF DEMAND DEPOSITS UNDER
THE FEDERAL RESERVE SYSTEM

Class of bank	In own vault or in federal reserve bank	In other banks temporarily
Country bank.....	\$70,000	\$50,000
Reserve city bank.....	90,000	60,000
Central reserve city bank.	180,000	0
Total — three banks ...	\$340,000	\$110,000

The details of these cash reserve provisions having been given elsewhere, we need not pause to consider them here, except to note that the \$110,000 of deposits in other banks tended to be as purely fictitious as similar deposits under the National Banking System and for the same reason, and may, therefore, be disregarded. The actual cash reserves were represented by the \$340,000 held in the member bank's own vaults or on deposit with the federal reserve bank. As we have indicated, even part of these might be cash reserves in name only, there being the probability that some of these so-called reserves would be nothing more than entries on the books of the reserve banks. Postponing consideration of this probability for the time being, and accepting the \$340,000 as true cash reserve, we find that it amounts to $11\frac{1}{3}$ per cent of their aggregate deposits of \$3,000,000. This represents a very substantial reduction from 14.5 per cent actual minimum cash reserve calculated on the same basis under the National Banking System.

Making allowance for the relatively greater amount of deposits carried by the country banks under the National Banking System with their low reserve requirements we adjusted the 14.5 per cent average downward to something above 13 per cent. A similar adjustment here would reduce it well below 11 per cent. An additional downward adjustment is required, moreover, to take into consideration the low minimum of 5 per cent of cash reserves required against time deposits by all classes of banks. In 1913, time deposits were not great, but they expanded rapidly under

the operation of the Federal Reserve Act, partly because deposits which otherwise would not have been so classed were now called time deposits by the banks for the purpose of thus reducing the amount of their required cash reserves. Everything considered, the minimum cash reserve requirements of the member banks were in the process of being reduced well below 10 per cent on the average, as against about 13 per cent under the National Banking System. It is, of course, true that reserve requirements for state banks and trust companies before 1913 were less rigorous than those of the national banks, but this does not invalidate our comparison, because for the first two and a half years of operation of the Federal Reserve System very few state banks and trust companies joined the system, whereas all the national banks were in the system under compulsion.

Had the law not been amended, the foregoing calculations would represent an understatement of the eventual cash reserve requirements under the Federal Reserve System for the reason that the member banks were required gradually to transfer that part of their cash reserves carried as deposits in other banks either to their own vaults or to the federal reserve banks. After three years the required reserves against demand deposits of the three classes of member banks were to be 12 per cent for country banks, 15 per cent for reserve city banks, and 18 per cent for central reserve city banks, all to be held either in their own vaults or on deposit with the reserve banks, with no possibility of duplication or pyramiding of such reserves by the member banks themselves. Calculated as before, the simple average for the three classes of banks would have been 15 per cent, or slightly more than under the National Banking System. Making allowance, however, for the low minimum of 5 per cent on time deposits, an advantage in the form of lower reserve requirements would still have been shown in favor of the new system.

Before the expiration of the three years during which the transfer of the cash reserves held in other banks was to be completed, the cash reserve requirements of the member banks were sharply reduced by the amendment of June 21, 1917, as previously stated, to 3 per cent for time deposits of all member banks, and to 7, 10, and 13 per cent for demand deposits of country banks, reserve city banks, and central reserve city banks respectively. Since all these reserves were now required to be carried with the federal reserve banks, there were no fictitious reserves as under the National Banking System, but there were fictitious reserves of another sort, to the extent that the so-called cash reserves of the member banks were not necessarily cash in the vaults of the reserve banks. The minimum reserve ratio of federal reserve banks in respect to deposits

having been 35 per cent, there needed to be only \$35 in actual cash in the reserve banks for every \$100 in reserve deposits of the member banks, and \$65 out of every \$100 of these "cash" reserves might be purely fictitious.

Disregarding the fictitious nature of these so-called cash reserves temporarily, we may calculate that the average cash reserves required by all member banks under the law as amended in 1917, and as it has stood since then, is less than 10 per cent. The average would be 10 per cent if there were no time deposits and if country banks had just the same amount of deposits as the central reserve city banks. But country banks have had greater total deposits than central reserve city banks and a very large part of total deposits have in recent years been time deposits. These two circumstances combined reduce the average required reserve ratio well below 10 per cent. This is forcefully illustrated by the condition of the member banks in January, 1929, near the height of that period of inflation. The average of daily figures for the month of January, 1929, was \$19,101,000,000 for net demand deposits, subject to reserve requirements of 7, 10, and 13 per cent for the three classes of banks, respectively, and \$13,465,000,000 for time deposits subject to a reserve requirement of only 3 per cent. Total reserve requirements were \$2,333,000,000, or a trifle less than 7.2 per cent. If 2 per cent is added to this average to represent the cash required by the member banks for till money — at the time they actually held less than 2 per cent — we obtain an average for required reserves of 9.2 per cent.

6. THREE FORMS OF RESERVE BANK LOANS TO MEMBER BANKS

While the reduction in the reserve requirements of the member banks of the Federal Reserve System below the requirements of the national banks under the National Banking System made possible a considerable degree of inflation of bank credit, most of the inflation under the Federal Reserve System has been based on the concentration of the country's actual cash reserves in the hands of the federal reserve banks. Here they can be used as the foundation of reserve bank credit and the means of creation of fictitious reserves of member banks. Consider the possibilities of inflation from this source.

It will be well to begin with a few simple calculations showing the approximate amount of bank credit that might theoretically be built upon 1 dollar of gold or gold certificate reserve held by the federal reserve banks. Prior to the enactment of the Gold Reserve Act of January, 1934, the federal reserve banks' gold reserve consisted of gold and gold certificates, the two being interchangeable, and prior to the banking holiday

and the Emergency Banking Act of March, 1933, both gold and gold certificates might be freely paid out into circulation by the reserve banks. Under the provisions of the Gold Reserve Act, title to the gold of the reserve banks passed to the Treasury and the reserve banks received in exchange therefor gold certificates. Although the reserve banks may obtain gold in exchange for gold certificates, when required in settling international trade balances, they are not permitted to pay out into common circulation either gold or gold certificates.

Neither the Gold Reserve Act nor any of the other banking and currency legislation of the Roosevelt Administration, from March, 1933, to January, 1934, changed the cash reserve requirements of the reserve banks in any other way than that just described, nor the reserve requirements of the member banks except for a provision in the Inflation Bill of 1933, authorizing the Federal Reserve Board, under certain conditions and with the approval of the President, to alter the reserve requirements of the member banks. These various measures will be discussed in more detail in later chapters. Here only a few essential provisions have been pointed out for the purpose of showing that the cash reserve provisions of these new laws have not essentially altered the conditions of potential credit expansion under the Federal Reserve System except in so far as such expansion may later be based upon irredeemable government paper money instead of upon gold coin and bullion. This being true, it follows that calculations on the potential power of bank credit expansion under the Federal Reserve System, based upon the provisions of the Federal Reserve Act as it stood before the amendments of 1933 and 1934, are applicable to present conditions of expansion if the term "gold certificates" is substituted for the term "gold," and if it is borne in mind that the reserve banks now may not make loans to member banks either in gold or gold certificates.

But in this chapter and the three following chapters we are concerned, not with the present powers of expansion, but with the powers of expansion during the years from 1914 to 1929 embracing two great periods of credit inflation. Before the Gold Reserve Act of 1934, the reserve requirements under the Federal Reserve System were as follows:

- a. The minimum reserve ratio of gold to federal reserve notes issued was 40 per cent.
- b. The minimum reserve ratio of gold and lawful money to reserve bank deposits was 35 per cent.
- c. The average minimum reserve ratio of member banks cannot be definitely stated, because it varied from 1914 to 1917 because of provisions of the law, and it varied later because of the varying proportions of demand and time deposits. Since 1917 the average reserve required against demand deposits

has ranged above 10 per cent, because demand deposits of central reserve city banks requiring a reserve of 13 per cent have ranged higher than demand deposits of country banks requiring a reserve of only 7 per cent. But since some considerable part of the so-called time deposits subject to reserve requirements of only 3 per cent have in fact actually been subject to check, the average minimum reserve against "deposit currency" has been less than 10 per cent, not including till money required by the banks, but not counted as legal reserves. In our calculations 10 per cent will be accepted as the average minimum required reserve.

On the basis of these reserve requirements and in order to avoid the use of small fractions, let us consider the power of credit expansion for every \$100 in gold (or since 1934, gold certificates) held by the reserve banks at any given time in excess of the reserves required by the notes and deposits then outstanding: For every \$100 of such excess reserves the reserve banks could expand credit by discounting commercial paper for member banks by the following amounts:

- a. \$100, if the advance to the member banks were made in gold or gold certificates.
- b. \$250, if the advance to the member banks were made in federal reserve notes.
- c. \$285.74, if the advance to the member banks were made in the form of deposits in the reserve bank, counting as reserve of the member banks.

Perhaps these figures require a word of explanation. If a reserve bank had gold reserves of \$100 in excess of its minimum requirements, and made a loan of \$100 in gold, it left its reserve requirements unchanged, having neither increased nor decreased its deposits or note issues, and the loan of \$100 used up exactly its excess reserves of \$100. If the reserve bank advanced a loan of \$250 in reserve notes, it now required 40 per cent of that amount in additional gold reserves against notes issued, and 40 per cent of \$250 is \$100. If the reserve bank advanced to a member bank \$285.74 in the form of a deposit subject to check, it thereby increased its deposits subject to a 35 per cent cash reserve requirement by that amount, and 35 per cent of \$285.74 is \$100. Incidentally, it may be pointed out that similar advances may be made to member banks through open-market operations of the federal reserve banks, if the bills and securities bought in the open market are purchased from member banks. Thus, open-market operations may permit the same degree of credit expansion on the basis of given excess reserves of reserve banks as direct advances to member banks by the method of discounting.

7. CALCULATING THE MAXIMUM EXPANSION OF CREDIT

Obviously, the maximum credit expansion with a given amount of excess reserves held by the reserve banks may be engineered through advances to member banks in the form of deposits credited to their account in the reserve banks, not only because advances in this form permit the maximum expansion for reserve banks, but because this is the only form in which the advances may be counted directly and at once as cash reserves by the member banks, on the basis of which they may collectively begin a multiple expansion of loans and deposits in turn. The \$100 in excess reserves held by the reserve banks, permitting an expansion in loans to member banks of \$285.74, all of which may be counted as reserves of the members banks, permits the latter to expand loans in the form of deposits by the amount of \$2857.40, assuming an average reserve ratio of 10 per cent for the member banks. In other words, subject to qualifications to be noted in a moment, every dollar of excess gold or gold certificate reserve held by the reserve banks represents a potential expansion of bank credit by member banks of \$28.57. The qualifications to be noted reduce this figure to approximately \$12.

It is impossible for member banks to expand loans greatly in the form of deposits subject to check without suffering a drain of actual cash across their counters, even though all member banks should expand at about the same rate and thus avoid unfavorable balances and a drain of cash at the clearing-house. This principle has been noted several times previously. Any general expansion of trade, without which no great expansion in bank loans and deposits will occur, involves the use of more cash in actual circulation outside of the banks, whether the trade expansion represents physical expansion in production and trade or merely price inflation. The extra cash is required mainly to meet cash payrolls and in small retail trade transactions. In other words, the ratio between cash in circulation and bank deposits subject to check tends to remain constant, although subject, of course, to seasonal and cyclical variation and secular trend.

As previously indicated, the ratio of cash in circulation to bank deposits subject to check during the later years of the National Banking System and the first few years of the Federal Reserve System was probably about 1 to 6. If, however, under the Federal Reserve System, we include time deposits of member banks along with their demand deposits, and add to the total of these the deposits of non-member commercial banks, but not deposits of savings banks, the ratio of cash in circulation to deposits becomes lower than 1 to 6, particularly during the period of inflation of 1923 to 1929. In our present calculations on potential bank

credit expansion under the Federal Reserve System we shall use the ratio of cash in circulation to demand and time deposits combined instead of the ratio of cash to demand deposits alone for two reasons. First, some part of the so-called time deposits have in fact been demand deposits called time deposits for the double purpose of reducing the legal reserve requirements and of affording a justification to banks competing for such deposits of the practice of paying interest on them. Second, inflation of loans and investments of commercial banks is just as truly an index of bank-credit inflation as expansion of deposits, and it proceeds more nearly in proportion to the inflation in total deposits than in proportion to the expansion of demand deposits alone. The ratio of \$1 in cash to \$8 in deposits will be used in our calculations although it is perhaps a little too low for the first period of inflation from 1914 to 1920, and too high for the second period of inflation from 1923 to 1929, the trend of the use of cash in circulation over this whole period having been downward.

If the amount of money in actual circulation does tend to equal $\frac{1}{8}$, or 12.5 per cent of bank deposits subject to check, then member banks, when they expand loans in the form of deposits subject to check at a rate uniform with one another, and uniform also with non-member banks, may be expected to lose cash at the rate of 12.5 per cent of their increase in deposits. Add to this 2 per cent of till money estimated as required on the average, and we get a total of 14.5 per cent of cash required by member banks against expansion of deposits subject to check. The 12.5 per cent of cash drained into circulation might either be paid out across the counters in cashing checks or be advanced in cash loans to customers.

If these estimates are correct, member banks financing expansion of credit through borrowings from the reserve banks would on the average tend to borrow \$14.50 in reserve notes or other cash and \$10 in the form of deposits subject to check in the reserve banks counting as cash reserve for every \$100 of expansion in loans made to their customers in the form of deposits subject to check. The ratio of loans made by the reserve banks in the form of cash to loans made in the form of deposits subject to check would be approximately 3 to 2; in other words, out of the total reserve bank loans made, 60 per cent would be in the form of reserve notes or other cash, and 40 per cent in the form of deposits counting as reserves of the member banks. If the advances were made to the member banks in the form of open-market operations, the 60 to 40 per cent ratio would still hold true, and if the expansion of the member banks' deposits were the result of expansion in their investment account rather

than in their loan account, the various ratios named would still hold true. If a considerable proportion of the expansion in deposits took the form of expansion of demand deposits improperly classed as time deposits, and thus requiring only a 3 per cent reserve, the \$10 estimate of reserve bank loans in the form of deposits in the reserve bank would be too high, and the 60 to 40 per cent ratio would be too low.

If the reserve banks make advances to the member banks in the proportion of 60 per cent in cash and 40 per cent in deposits, and if they desire to achieve the maximum expansion of reserve bank credit, they will make the 60 per cent of cash advances exclusively in the form of reserve notes, thus retaining the maximum amount of actual cash reserves as a basis for expansion of their notes issued and deposit liability. If the liabilities of the reserve banks are in the proportion of 60 per cent in reserve notes, against which the required reserve is 40 per cent, and 40 per cent in deposits, against which the required reserve is 35 per cent, their average required reserves against notes and deposits combined will be 38 per cent. If their average required reserves are 38 per cent, they can under these conditions make advances to the member banks of \$263.16 for every \$100 of reserve bank cash reserves, as follows:

Advances in reserve notes	.....	\$157 90
Advances in deposits	. . . . .	105.26
Total	.....	<u>\$263.16</u>

The advances of \$105.26 to the member banks in the form of deposits counting as reserve would by assumption permit the member banks to expand credit to their customers in the form of deposits subject to check by ten times this amount, or \$1052.60. Against this amount of new deposits the banks would require by assumption 2 per cent of this sum as additional till money, or \$21.05. Deducting this sum from \$157.90 of reserve notes received from the reserve banks, the banks would have left \$136.85 available for cash loans to their customers to meet the increased demand for cash in circulation. Total loan expansion possible for the member banks would, therefore, be \$1052.60 plus \$136.85, or \$1189.45 for every \$100 of excess cash reserves of the reserve banks, or approximately \$12 in member bank loan expansion per \$1 of reserve bank cash reserve. This ratio of expansion would imply that about two thirds of the total reserves of the reserve banks be in gold or gold certificates, since reserves against notes must be in gold or gold certificates, while the reserves against deposits may be either in gold or gold certificates or in other lawful money.

Because, as previously indicated, our average reserve ratio assumed of

10 per cent is too high rather than too low and because our assumed ratio of \$1 in cash in circulation to \$8 of commercial bank deposits is higher than the actual ratio prior to the growth of hoarding after 1929, the maximum expansion of member bank credit per dollar of excess reserves of the reserve banks is more rather than less than \$12. While the method of calculation used makes this a mere approximation, and not an exact mathematical result, it is nevertheless an approximation of some significance, because it indicates that the Federal Reserve System had in its early years credit expansion potentialities probably three or four times as great as the National Banking System, with a given amount of lawful money available in the country, and in more recent years — say from 1923 to 1929 — had even greater potential powers of inflation, as the ratio of cash required in circulation to bank deposits declined and the ratio of time deposits to total deposits increased.

8. INFLATIONARY AMENDMENTS TO THE FEDERAL RESERVE ACT: CONCENTRATION OF RESERVES

The power of inflation was inherent in the Federal Reserve Act of 1913. It was greatly increased by various amendments to that law, some of which have already been considered. The power of inflation was enhanced by the reduction in member bank reserve requirements effected by the amendment of June, 1917. Even more important than the reduction in member bank reserve requirements was the effect of this amendment in concentrating all the legally required reserves of the member banks in the vaults of the reserve banks where they could be made the basis of expansion of reserve bank credit. To the extent that the transfer of reserves to the reserve banks was accomplished by the transfer of commercial paper rather than of gold or other lawful money, it did not directly increase the lending power of the reserve banks, because it did not place additional cash in their hands. But in large measure the transfer of member bank reserves from their own vaults to the vaults of the reserve banks took the form of withdrawal of actual cash from member banks and its deposit with the reserve banks, thus increasing their cash reserves by the same amount as it increased their deposit liabilities, and giving them a great deal of additional excess reserve. This was well understood at the time, and the transfer was justified as an emergency war measure which would permit the desired amount of inflation. It was the expectation, at least in some quarters, that after the war this emergency measure would be repealed, but no repeal has taken place. Congress can more readily be prevailed upon to pass inflationary bills than to pass deflationary bills.

9. REDUCTION IN COLLATERAL REQUIRED IN NOTE ISSUE

The amendment of June, 1917, increased the power of inflation in still another way by certain provisions relating to the issue of federal reserve notes. It will be recalled that originally federal reserve notes could be issued by the reserve banks only upon the deposit with the Reserve Board of 40 per cent of the face value of the notes in gold and the further deposit with the Board of 100 per cent of eligible commercial paper, discounted for the member banks. This limited the amount of notes issued not merely by the 40 per cent gold reserve, but also by the amount of eligible paper discounted for member banks by the reserve banks. The second limitation was evaded, however, by the simple expedient of redeeming the pledged commercial paper by depositing with the Reserve Board an equal amount of gold. The commercial paper could then again be presented as collateral for additional note issues on the same basis as before, and then again redeemed in gold, and presented once more as collateral for additional note issues. By frequent repetition of this process the reserve banks could pump as many reserve notes into circulation as their gold reserves permitted. This did not in itself represent inflation, because reserve notes so issued were in effect nothing but gold certificates quite similar to the gold certificates issued by the United States Treasury. But indirectly the process opened the way to inflation. The reserve banks exchanged the reserve notes thus obtained for gold certificates or gold coin previously in circulation, and so built up larger gold reserves which might later be used as the basis of an expansion of reserve bank credit in the form of reserve notes and member bank deposits. This method of accumulating gold by the reserve banks was favored by the Government, which accepted inflation of the currency as a useful aid in financing the war, and, to facilitate the process, Congress, with the amendment of June 21, 1917, changed the note-issue requirements as follows:

The total amount of collateral required from the reserve banks for the issue of federal reserve notes was reduced from 40 per cent in gold plus 100 per cent in eligible commercial paper to 40 per cent in gold plus 60 per cent in eligible commercial paper. The commercial paper thereafter could consist of bills of exchange and bankers' acceptances bought in the open market by the reserve banks and not merely of paper discounted for the member banks under Section 13, as theretofore. Finally, the reserve banks, if they desired, could substitute gold or gold certificates for any part of the 60 per cent of commercial paper. In other words, the reserve banks might now issue federal reserve notes by depositing with the Reserve Board 100 per cent of the amount of such notes in gold and com-

mercial paper, not less than 40 per cent of the amount to be in gold or gold certificates. These changes in the note-issue requirements gave the reserve banks a great deal more freedom in issuing reserve notes in three distinct ways. First, they cut down the total amount of commercial paper required per dollar of notes to be issued. Second, they permitted the reserve banks to enter the open market to obtain such paper instead of compelling them to await requests for discounting by member banks. Third, they facilitated, as just indicated, the corraling of gold in the vaults of the reserve banks, thus increasing the total amount of their gold reserves.

10. DIRECT LOANS TO MEMBER BANKS

An earlier amendment, that of September 7, 1916, also facilitated the process of inflation. The original act, it will be recalled, made no provision for direct loans to member banks on their own promissory notes. The only way in which a member bank could obtain reserve bank funds was by rediscounting with the latter its customers' paper, or by selling to the reserve banks such paper as it might have eligible for purchase by the reserve banks in the open market — mainly bankers' acceptances and government securities. By the amendment of September, 1916, provision was made for direct advances by reserve banks to member banks on the latter's own promissory notes with a maturity of not more than fifteen days. Such notes had to be collateralized by notes, drafts, bills of exchange, or bankers' acceptances eligible for rediscount or for purchase in the open market by the reserve banks, or secured by the deposit of United States bonds or notes with the reserve banks. The purpose and result of this amendment were not purely inflationary, and the amendment may be praised or condemned, depending upon one's point of view, or the purpose for which it might be used. The following arguments may be presented in its favor:

1. It permitted member banks to borrow for the exact number of days they desired, instead of discounting customers' notes with a maturity perhaps considerably longer than the period for which the advance was required.
2. It simplified the computation of the interest on the loan — only one note was discounted instead of a batch of assorted notes.
3. It was safer for the reserve bank, since it was now secured by the member bank's own promissory note plus probably a larger amount of collateral.

These are impressive arguments, and the only counter-argument is that such direct loans to member banks increased the reserve banks' power of inflation, already too great to be utilized to the full with safety. Before this amendment advances of the reserve banks to member banks were

limited, not only by the reserve requirements of the reserve banks, but by the amount of eligible commercial paper in the hands of the member banks — the amount of which itself depended upon the amount of short-term loans they made to their customers. After this amendment, advances of reserve banks to member banks were limited, not by the amount of eligible short-term paper, representing short-term loans of member banks to their customers, but instead by the amount of such paper plus the member banks' investments in government bonds. Reserve bank credit could now be used to finance member banks' investments in government bonds, as well as the strictly commercial banking operations represented by short-term loans to business men. It turned out that the member banks were to use reserve bank credit for this purpose on a large scale.

11. EFFECTS OF INFLATIONARY AMENDMENTS SUMMARIZED

To sum up, by 1917 inflationary amendments to the Federal Reserve Act, itself inherently inflationary, had accomplished the following results: They brought about extreme concentration of the actual cash reserves of the country in the vaults of the federal reserve banks, where they could become the basis of a vast increase in reserve bank credit. They increased the power of credit expansion by reducing the cash reserve requirements of the member banks. They liberalized the requirements for the issue of federal reserve notes by the reserve banks, and they permitted the reserve banks to make direct advances to member banks on the latter's own promissory notes, thus facilitating the extension of credit by the reserve banks to the member banks both in the form of deposits subject to check and in the form of federal reserve notes. For the most part these inflationary amendments to the Federal Reserve Act were considered at the time of enactment to be in the nature of emergency war measures, subject to later repeal, but none of them has been repealed. Instead, a new series of inflationary amendments has been added as the result of another period of stress — the depression of 1930-1933, itself the outgrowth in large measure of the inflation engendered by the first series of inflationary acts. Thus does evil beget evil, in monetary matters. So by the Federal Reserve Act of 1913 and wartime amendments to this act the stage was set for inflation. The law permitted it; the bankers welcomed it; the business interests hailed it with enthusiasm; on the whole, the people apparently wanted it; and inflation came. It came along with the excitement and stress of war, it is true. But given the setting just described, even without the so-called war amendments, and given the temper of the people, as represented by business

men, bankers, and politicians, and it seems highly probable that inflation would have come, war or no war. Our economic soil is so rich in speculative elements and so well warmed with frenzied finance that it requires only a few seeds of inflation to grow a large crop. In the following chapter we shall see how the seeds of inflation planted by the Federal Reserve Act grew and brought forth financial trouble a hundredfold.

CHAPTER XXIII

THE FIRST PERIOD OF INFLATION: 1914-1920

1. EXCESS RESERVES OF NATIONAL BANKS IN 1914

AT THE time of the establishment of the Federal Reserve System late in 1914, the deposits of the national banks were in excess of \$6,000,000,000, and their actual required reserves were approximately \$800,000,000. When these banks became member banks of the new system, their required reserves, eliminating fictitious reserves, consisting of deposits in other banks, were reduced as previously calculated about one fourth. Thus, by the change in the law national banks, now become member banks of the Federal Reserve System, had approximately \$200,000,000 of excess reserves thrust upon them. If, then, the member banks desired to make use of these excess reserves for the purpose of credit expansion — that is, in the making of loans or investments — there was nothing the Federal Reserve Board or the federal reserve banks could do to stop them. Provided only that all the banks in the system expanded credit at about the same rate, and that the non-member banks likewise expanded as their reserves increased in consequence of the expansion of the member banks, these excess reserves of the member banks were sufficient to finance an expansion in loans and investments of approximately \$1,000,000,000, after making full allowance for the drainage of cash into circulation from which the banks would suffer as a result of such expansion.

The reserve banks could not have prevented such expansion of the member banks by refusing to discount their paper, because the latter required no such discounting as a condition of expansion so long as they had possession of excess reserves. Neither could the reserve banks have brought pressure to bear upon the member banks to prevent expansion by open-market operations, because in the early months of their operation they could not sell bills or securities in the open market to restrict member bank expansion without first entering the market to buy such bills or securities and thereby inflating credit. Not only had the capital stock subscriptions of the member banks been paid to the reserve banks in gold, but almost the whole amount of the first two installments of reserves had been paid in gold. For the first year or more of their operations the assets of the reserve banks consisted mainly of gold and not of bills and government securities.

2. THE GOLD IMPORTS OF 1916-1917

To the considerable capacity for expansion of credit given to the member banks by the excess reserves thrust upon them by the Federal Reserve Act in the beginning, there was added a great additional capacity for such expansion by the imports of gold resulting from the European war. The heavy inflow of gold did not begin immediately after the outbreak of the war in the summer of 1914. In fact, during the fiscal year ending June 30, 1915, net imports of gold amounted to only \$25,344,607. But during the following year net imports of gold rose to \$403,759,753, and in the year ending June 30, 1917, net imports reached the tremendous figure of \$685,254,801, the total for the two-year period having been well in excess of \$1,000,000,000. This enormous quantity of gold flowed in large measure into the vaults of the member banks, whence part or all of it could be transferred to the reserve banks to provide the legally required reserve for a potential expansion of member bank credit to the amount of several billions of dollars.

Excess reserves held by member banks do not, of course, result necessarily in credit expansion. They only give the banks the power to expand if the demand for expansion comes from the customers of the banks in the form of a demand for loans, or if the banks themselves desire to expand by means of investing surplus funds in securities, such as government and corporation bonds, or, in so far as the law allows, in real estate mortgages. But with enormous war orders flowing into our markets from Europe, American business men were eager to expand operations and to share in the war profits. The time was ripe for an orgy of bank credit expansion in the form of loans to business men to finance rapid expansion of business operations, and the bankers themselves were eager to invest funds in securities yielding generous returns. Loans and investments and deposits of the member banks as well as those of the non-member banks swelled rapidly, and inflation was soon in full swing.

3. BANK CREDIT EXPANSION: 1914-1917

The extent of the movement during the period from June, 1914, to June, 1917, is indicated by the statistics in Tables VI and VII.

In the three-year period from June, 1914, to June, 1917, loans and investments of all banks combined increased \$7,498,000,000, or 35.6 per cent, while deposits increased \$7,786,000,000, or 41.9 per cent. The rate of increase in both deposits and loans and investments was greater for member banks than for non-member banks, the loans and investments of the former having increased 49.8 per cent, while those of the

latter increased only 26.9 per cent, and the deposits of the former having increased 61.6 per cent, while those of the latter increased only 31.7 per cent. This greater rate of increase shown by the loans and investments and deposits of the member banks is accounted for in part by the fact that the number of member banks had increased at the expense of the number of non-member banks. Some state banks and trust companies had converted into national banks and had thus automatically been transformed from non-member banks into member banks. In addition, more than fifty state banks and trust companies had joined the Federal Reserve System during this period without converting. Aside, however, from their relative increase in numbers, the member banks would have had a better opportunity for credit expansion at this time than non-member banks for two reasons, namely, their cash reserve requirements had been sharply reduced, as already explained, and they had access to loans from their reserve banks, not directly available to non-member banks.

TABLE VI. LOANS AND INVESTMENTS OF ALL BANKS IN THE UNITED STATES, 1914-1917

(In millions of dollars) *

Date	All banks	Member banks	Non-member banks
June 30, 1914.	20,789	8,313 †	12,475 †
June 23, 1915	21,466	8,764	12,702
June 30, 1916	24,587	10,315	14,271
June 20, 1917.	28,287	12,453	15,833
Increase from 1914 to 1917 (in millions of dollars)	7,498	4,140	3,358
In per cent.	35.6%	49.8%	26.9%

* *Annual Report of Federal Reserve Board, 1928, p. 111.*

† Figures for this date refer to national and non-national banks.

TABLE VII. DEPOSITS EXCLUSIVE OF INTERBANK DEPOSITS OF ALL BANKS IN THE UNITED STATES, 1914-1917

(In millions of dollars) *

Date	All banks	Member banks	Non-member banks
June 30, 1914.	18,566	6,374 †	12,192 †
June 23, 1915.	19,131	6,678	12,453
June 30, 1916	22,759	8,395	14,364
June 20, 1917.	26,352	10,301	16,052
Increase from 1914 to 1917 (in millions of dollars).	7,786	3,927	3,860
In per cent.	41.9%	61.6%	31.7%

* *Annual Report of Federal Reserve Board, 1928, p. 111*

† Figures for this date refer to national and non-national banks.

But here we are not interested primarily in the greater rate of expansion of the member banks as compared with the non-member banks, but rather with the tremendous expansion by all banks combined. The credit expansion represented by an increase in deposits of 42 per cent in three years was much greater than the normal rate of increase in production and trade, and it was greater also than the rate of increase in production and trade during the three years under consideration. Moreover, this greatly expanded volume of bank deposits was not idle; in these boom times turnover of bank deposits was rapid. Consequently, a substantial rise in commodity prices was made possible by the expansion of bank credit in the form of deposits subject to check, and it actually took place.

4. THE RISE IN PRICES: 1914-1917

The rise in prices was naturally more nearly in proportion to the increase in bank deposits than to the increase in loans and investments, and more nearly in proportion to the increase in deposits of member banks, all of which were commercial banks, than to the increase in deposits of non-member banks, which included savings banks whose deposits do not represent part of the circulating currency. The rise in wholesale prices was in fact even greater than the increase in deposits of the member banks. The index number of wholesale prices of the Bureau of Labor Statistics, with prices of 1913 representing 100 per cent, which had remained practically stationary during 1914 and the first three quarters of 1915, rose to 111 by January, 1916, and to 151 by January, 1917, and farther to 187 by July, 1917. On account of the tendency of real estate and retail prices and the wages of labor to rise less rapidly than wholesale prices, the general price level rose in smaller degree than wholesale prices — that is to say, by less than 87 per cent. Nevertheless, there was a sharp general rise in prices. The index number of general prices published by the Federal Reserve Bank of New York shows the general level of prices in July, 1917, to have been 41 per cent above the 1913 level.

5. RESERVE BANKS NOT RESPONSIBLE FOR INFLATION OF 1914-1917

If by inflation is meant such an expansion of money and credit as to permit a sharp general rise in prices, then obviously we had a large measure of it in the United States from June, 1914, to June, 1917. It remains to fix responsibility for this inflation. We may begin by absolving the Federal Reserve Board and the federal reserve banks from any great share of responsibility for inflation during this period.

except possibly near the very end of it. The Federal Reserve Act of 1913, by reducing the reserve requirements of member banks, and the huge gold imports of the period had armed the member banks with such great excess reserves that they were fully competent to engineer most of the credit expansion that actually took place without aid from the reserve banks. And, in fact, up to April, 1917, when inflation by member banks was already far advanced, the reserve banks had contributed relatively little to expansion. Taking the monthly average of daily figures, the bills discounted by reserve banks for member banks — representing direct extension of credit to member banks — amounted then to only \$25,169,000, and the total amount of reserve bank credit outstanding — including bills and securities bought in the open market, as well as bills discounted directly for member banks — was only \$282,310,000. This extension of reserve bank credit, even if taken wholly in the form of deposits in the reserve banks and utilized to the full by the member banks in expansion of their own, would have accounted for less than half the actual amount of expansion that occurred.

While this rather moderate extension of reserve bank credit to the member banks doubtless facilitated the process of credit expansion, withholding this reserve bank credit would not have prevented expansion. And if the reserve banks had not begun extending credit in any form — that is, had neither invested in bills and securities in the open market nor discounted bills for member banks — they would have had few earning assets, could not have paid their expenses, and would have been in no position to exercise control over the banking system such as central banks are supposed to exercise. At some time or other they had to begin the process of discounting and buying bills and securities in the open market or renounce their natural functions. It was simply unfortunate that a huge influx of gold tending toward inflation occurred during the very time when their operations under the law would inevitably involve some inflation.

The member banks themselves and the non-member banks can hardly be blamed for wanting to make profitable use of the huge excess reserves thrust upon them by the Federal Reserve Act in 1913, and by the favorable balance of trade growing out of the European war a little later. In short, setting our new banking system in motion at a time when Europe was unloading its gold in our money market made a substantial amount of inflation practically unavoidable, and no one is to be much blamed for the results from 1914 to 1917, unless it is the architects of the Federal Reserve Act for the sharp reduction in reserve requirements

which they devised. In mitigation of this offense, it must be said that no one could have been expected to foresee the great imports of gold shortly to follow.

6. EXTENT OF RESERVE BANK CREDIT EXPANSION: 1917-1920

While the reserve banks played only a minor rôle in such inflation of our bank credit as occurred during the first two and a half years of operation of the Federal Reserve System, up to April, 1917, such was not the case in the further inflation that occurred after we entered the war. We had hardly entered the war before the Federal Reserve Board and the federal reserve banks under the domination of the Secretary of the Treasury embarked deliberately upon a policy of inflation. This is shown clearly in the following federal reserve bank statistics for the last week of the months of April, May, and June, 1917:¹

Item (millions of dollars)	April	May	June
Bills discounted	\$35	\$47	\$219
Bills bought in open market	71	107	202
United States securities	118	118	71
Municipal warrants	15	15	2
Total earning assets	\$239	\$287	\$495

In these two months there was a net increase in total earning assets of the reserve banks of \$256,000,000, or more than 100 per cent. These figures indicate the approximate beginning of a time of wild inflation lasting for more than three years, and embracing the operations, not only of the reserve banks, but of all the commercial banks in the country. Hereafter, for the purpose of ease in comparison, statistics will be given only for the month of June for the various years considered — the period from June, 1917, to June, 1920, coinciding fairly closely with the period of expansion and next two-year period covering the period of deflation. We shall note first the extent to which this movement of inflation and subsequent inevitable deflation was reflected in federal reserve bank statistics during the years 1917 to 1922 inclusive, and then how it was further reflected in the statistics of deposits, loans, and investments of the state and national banks and trust companies.

7. MOPPING-UP THE MONETARY GOLD STOCKS

Observe some of the more significant relations between the various figures given in Table VIII. First of all note the rapid increase in the cash reserves of the reserve banks from \$1,134,000,000 in June, 1917, to \$1,983,000,000 in June, 1918, and the further substantial increase to

¹ *Annual Report of the Federal Reserve Board, 1922, p. 53.*

this was during a period when total gold stocks in the country had actually increased by more than \$500,000,000.

Observe next the use made of the gold corralled by the reserve banks in the form of cash reserves. It was made the basis of an enormous expansion of reserve bank credit, which in turn was to be utilized as the basis of a gigantic expansion of member bank credit reflected in the form of customers' deposits subject to check, on the one hand, and loans and investments of the banks on the other. Total reserve bank credit, consisting mainly of bills discounted for member banks, bills bought in the open market, and United States securities bought in the open market, increased from \$517,000,000 in June, 1917, to \$3,382,000,000 in June, 1920, an increase of \$2,865,000,000, or 554 per cent. A very large part of the total increase in reserve bank credit took the form of an increase in bills discounted for member banks, the increase in this item alone having been \$2,301,000,000.

When the reserve banks, during the process of expansion of reserve bank credit from 1917 to 1920, discounted bills for member banks and bought bills and securities in the open market, they made payment, not in gold, which at this time they were accumulating and hoarding as reserve, but in the form of federal reserve notes and member bank deposits subject to check, which constituted, in the later years of the period shown in Table VIII, almost all the deposits of the reserve banks. The member bank reserve deposits in the reserve banks increased from \$804,000,000 in June, 1917, to \$1,853,000,000, in June, 1920, an increase of \$1,049,000,000, or 130 per cent. It must be stated, however, that some \$350,000,000 of this increase in member bank reserve deposits grew out of the transfer of member bank reserves from other banks into the vaults of the reserve banks under the amendment of June 21, 1917, most of the transfer having been made during the first half of July, so that the net increase in member banks' reserve account with the federal reserve bank which may be attributed to expansion of reserve bank credit during the three years, 1917 to 1920, was approximately \$700,000,000.

8. REASONS FOR THE RELATIVELY LARGE INCREASE IN RESERVE NOTES

The expansion in federal reserve note circulation was much greater both relatively and absolutely during this period than the expansion in member bank reserve deposits, the increase in note circulation having been from \$192,000,000 in June, 1917, to \$3,114,000,000 in June, 1920, an expansion of \$2,622,000,000, or 533 per cent. Our previous calculations have indicated that reserve banks in financing expansion of

member bank credit would tend to be called upon to pay out in cash about \$3 for every \$2 advanced to the member banks in the form of reserve deposits. But the actual ratio of expansion between these two items was about 2.6 to 1, even before making allowance for the deduction of \$350,000,000 of transferred reserves which brings down to \$700,000,000 the actual increase in member bank reserves that may be attributed to expansion of reserve bank credit. Making this allowance the ratio rises to 3.7 to 1. Taking into consideration two known factors of great importance, the discrepancy between the actual ratio of expansion of reserve bank deposits and reserve notes, and the ratio that might have been expected can be in large measure explained. The first factor is that the same change in the law which led to the transfer of reserves, and thus to an increase of about \$350,000,000 in member bank deposits with the reserve banks, reduced substantially their reserve requirements, and left them with heavy excess cash reserves on hand. On March 5, 1917, the actual reserves of all national banks, which then represented practically all member banks, amounted to \$1,563,000,000, this figure including only reserves in their own vaults or in the reserve banks, and excluding \$1,076,000,000 of what we have called fictitious reserves "due from approved reserve agents."¹ Total required reserves at that date were \$1,532,000,000, or \$31,000,000 less than the true cash reserves of the banks.² By the June, 1917, amendment the minimum legal reserve ratio was reduced 5 per cent on demand deposits of all classes of member banks, and 2 per cent on time deposits. Making allowance for the assumed 2 per cent of till money reserve required under the new law, when all legal reserves were in the reserve banks, this amounted to a reduction of 3 per cent on total demand deposits. Total demand deposits of all member banks on June 20, 1917, were \$7,856,000,000, and a reduction in required reserves of 3 per cent of this sum amounts to \$236,000,000. Adding this to a previously existing excess reserve item of \$31,000,000, the amount of excess on March 5, we get the figure of \$267,000,000, which represents approximately the amount of excess reserves at the time the new law went into effect. The point to carry forward here is that, with approximately this quantity of excess cash reserves in the reserve banks, the member banks could extend credit to their customers to exactly the same amount as they could by an advance of this sum from the reserve banks, assuming that they had no such excess reserves. This figure, then, we may add to the net expansion of member bank reserves from

¹ Federal Reserve Bulletin, June 1, 1917, p. 484.

² *Ibid.*

June, 1917, to June, 1920, to obtain the true measure of potential credit expansion through expansion of member bank reserve account with the federal reserve banks. Adding the \$267,000,000, then, to the net expansion previously named of \$700,000,000, we get \$967,000,000.

Consider now the second of the two factors affecting the actual ratio of expansion of reserve notes to the expansion of member bank reserves: this is the decline in the total amount of money — other than reserve notes — in circulation during the three-year period ending June 30, 1920, this decline amounting to \$1,157,000,000. By money in circulation, it should be understood, is meant the amount of money in the country, not including the amount in the United States Treasury or in the federal reserve banks. A large part of this great decline of \$1,157,000,000 was brought about by the exchange of reserve notes for gold and gold certificates by the federal reserve banks in the process previously mentioned of mopping-up the country's monetary gold. Part of the decline was the result of the transfer of the cash reserves from the vaults of the member banks, where it had been considered in circulation, to the vaults of the federal reserve banks. But regardless of the cause of the decline in other kinds of money in circulation, federal reserve notes had to be pumped into circulation to fill the void left by the disappearance of the other kinds of money, and for this purpose we may assume \$1,157,000,000 of the total amount of \$2,622,000,000 of federal reserve notes placed in circulation between June, 1917, and June, 1920, were used. This leaves a balance of only \$1,465,000,000, apparently required to provide the extra cash in circulation and bank till money to match the expansion of member bank credit made possible by the original excess reserve deposits of member banks and subsequent advances to them from the reserve banks amounting, as calculated, to \$967,000,000.

With this modification justified by the two known factors just considered, we arrive at a ratio of expansion in federal reserve note issues and member bank reserve deposits of approximately 1.5 to 1, or the ratio our calculations in the preceding chapter indicated would tend to prevail during a period of credit expansion. These calculations, it may be recalled, were based on the assumption that for every dollar increase in deposits of commercial banks approximately twelve and one half cents of cash would be drained into circulation and two cents of additional till money would be required. This represents a closer correspondence between the actual ratio and the calculated ratio than one might reasonably expect in view of the fact that at the beginning of the period member bank deposits represented only 39 per cent of all

bank deposits, and at the end of the period only 58 per cent, and that the non-member banks expanded credit under conditions different from those of the member banks. It must be borne in mind, however, that the real source of expansion of all banks was the credit of the federal reserve banks, and that this percolated to the non-member banks through the loan and investment expansion policy of the member banks, and that consequently the results were much the same in their effect upon reserve bank credit as they would have been if all commercial banks had been member banks.

Incidentally it is interesting to note, in connection with the assumption that expansion of bank deposits tended, at the time under consideration, to involve an expansion of cash in circulation (outside of the reserve banks and the Treasury) of about 14.5 per cent of the amount of expansion in the bank deposits, that the actual increase in money in circulation from June, 1917, to June, 1920, was \$1,401,000,000, while the increase in deposits of national banks, state banks, and trust companies combined — that is, all commercial banks — was \$10,083,000,000, and that 14.5 per cent of \$10,083,000,000 is \$1,462,035,000, or just 4.3 per cent more than the increase in the amount of money in circulation.

9. THE LIMIT OF RESERVE BANK CREDIT INFLATION REACHED IN 1920

In respect to the 1917-1920 policy of the reserve banks, it is obvious that the banks would have had much less power to expand credit if they had not absorbed enormous quantities of gold from circulation. But the necessity of issuing about one billion dollars in reserve notes to replace the gold taken from circulation reduced considerably the power of the reserve banks to extend credit to the member banks either in the form of additional reserve notes or in the form of reserve deposits. This was a fortunate circumstance, since it appears that the reserve banks were not inclined to call a definite halt on further inflation until their reserve ratio threatened to fall below the legal minimum. The legal minimum for the twelve reserve banks combined, with the relative amount of outstanding reserve notes and deposits in June, 1920, was about 38 per cent against notes and deposits combined. The actual ratio in June was 41.3 per cent and in March, 1920, it had fallen even lower, to 40.6 per cent. Theoretically and legally, expansion could have been carried much further by issuing more reserve notes subject to a moderate progressive tax, as previously explained. Actually, however, any substantial further expansion would have destroyed confidence in the reserve banks and in the whole banking situation, and would have caused runs on banks and the probable suspension of the gold standard.

The policy of the reserve banks and the Reserve Board was apparently inflation to the utmost limit consonant with the retention of the gold standard. When finally it was necessary to call a halt on the disastrous inflation, even more disastrous deflation inevitably followed. Reserve bank credit, as represented by bills discounted and bills and securities bought in the open market, declined rapidly from 1920 to 1922, the shrinkage in two years having been almost two thirds, and in the case of bills discounted for member banks alone more than four fifths. Whether this deflation of reserve bank credit was a cause or result of deflation of member bank deposits and loans and investments we shall consider later. Here we may say that deflation of neither class of banks would have been necessary if there had been no antecedent inflation, and the member banks could not have carried inflation far without the aid of the reserve banks. The evils that resulted both from inflation and from deflation — and they were great, and still leave their marks upon the country's industry and trade — must be laid in large measure directly at the doors of the reserve banks. These evils were engendered by the deliberately conceived policy of the responsible officials of the Reserve Board and the reserve banks. Before considering their reasons for desiring inflation and passing judgment upon their actions, it will be convenient to consider in detail some statistics bearing upon the inflation of the member and non-member commercial banks. In order to understand clearly the nature and the extent of this inflation, we shall have to examine a considerable variety of statistics of bank deposits, loans, and investments, and pay some attention to the various kinds of money in circulation during the period from June, 1917, to June, 1920.

10. EXPANSION OF BANK DEPOSITS, LOANS, AND INVESTMENTS: 1917-1920

We have stated that the member bank inflation of 1917-1920, as represented by the great expansion in bank deposits, loans, and investments, could not have taken place without the aid of the reserve banks. So far as the member banks were concerned, their total excess reserves after the amendment of June, 1917, were less than \$300,000,000, on the basis of which they could have expanded loans and investments not much more than \$3,000,000,000, even if no allowance is made for the drainage of cash into circulation and the increase in the amount of till money required as a concomitant of such expansion. Taking into consideration such an increase in the demand for cash, the total expansion that the member banks could have engineered without aid from the

reserve banks, and without the aid of an increase in cash in circulation from sources other than the reserve banks, would have been less than \$1,500,000,000. But as stated previously, and, as indicated in Table IX, the total amount of money in circulation in the United States, other than federal reserve notes, actually declined by \$1,157,000,000 from June, 1917, to June, 1920. The conclusion is unavoidable that most of the expansion of deposits, loans, and investments of the commercial banks of the country that occurred during this period can be traced directly to the expansion policy of the Federal Reserve Board and the federal reserve banks.

TABLE IX. MONEY IN CIRCULATION IN THE UNITED STATES: 1917-1922 *

(Figures for June 30, in millions of dollars)

Item	1917	1918	1919	1920	1921	1922
Gold coin.....	666.5	537.2	474.9	474.8	417.3	415.9
Gold certificates.....	1082.9	511.2	327.6	259.0	200.6	173.3
Total gold and gold certificates.....	1749.4	1048.4	802.5	733.8	617.9	589.2
Standard silver dollars..	71.8	77.2	79.0	76.7	65.9	53.0
Silver certificates.....	468.1	370.3	163.4	97.6	158.8	265.3
Treasury notes of 1890..	2.0	1.9	1.7	1.7	1.6	1.5
Subsidiary silver.....	193.7	216.5	229.3	248.9	235.3	229.3
United States notes (greenbacks).....	311.6	291.9	274.1	278.1	259.1	292.3
Federal reserve notes..	506.8	1698.2	2150.3	3061.7	2599.6	2138.7
Minor coins.....	68.4	75.0	81.8	91.0	91.4	89.2
Federal reserve bank notes.....	3.7	11.0	155.0	185.4	129.9	71.9
National bank notes....	690.6	691.1	639.5	689.6	721.4	727.7
Total money in circulation.....	4066.4	4481.7	4876.6	5167.6	4911.0	4463.2
Total not including federal reserve notes..	3559.6	2783.5	2126.3	2102.9	2311.4	2321.5
Net imports of gold in fiscal year.....	685.2	..	..	..	505.0	441.0
Net exports of gold in fiscal year.....	..	66.1	51.2	315.9	..	..

* Net imports and exports of gold statistics from *Statistical Abstract of the United States*, 1929, p. 470. All other statistics from *Annual Report of the Secretary of the Treasury on the State of the Finances*, 1928, pp. 554-55.

It will be interesting now to compare the total expansion made theoretically possible by the expansion of reserve bank credit with the actual expansion that was carried through by the commercial banks as shown in Tables X and XI on pages 568 and 569.

The potential expansion in deposits of member banks, as calculated in the preceding chapter, is at the rate of not less than \$10 for every

TABLE X. BANK DEPOSITS IN THE UNITED STATES: 1917-1922

(Figures for year ending June 30, or for nearest available date, in millions of dollars)

Item	1917	1918	1919	1920	1921	1922	Increase, 1917-20	
							Millions of dollars	Per cent
Individual deposits of: *								
National banks .	9321	10006	11865	13672	12373	13229	4351	46 7
State banks .	5376	6090	8969	10827	10664	10098	5451	101 4
Trust companies	5781	5954	5676	6062	5602	6491	281	4 9
Total	20478	22050	26510	30561	28649	29818	10083	49 2
Deposits, exclusive of interbank deposits: †								
Member banks .	10301	15670	19171	21915	20637	22397	11614	112 7
Non-member banks	16052	13095	14133	15805	15104	15219	(dec) 247	1 5
All banks .	26352	28765	33603	37721	35742	37615	11369	43 1
Individual deposits of savings banks: ‡								
Mutual. .	4422	4422	4751	5187	5375	5780	765	17.3
Stock ..	996	1050	1152	1351	443	1402	355	35 6
Total. . .	5418	5472	5903	6538	6018	7182	1120	20 7

* *Statistical Abstract of the United States*, 1929, p. 267† *Annual Report of the Federal Reserve Board*, 1928, p. 111.‡ *Annual Treasury Report*, 1928, p. 789

dollar of excess reserve they hold or acquire with the reserve banks, provided they obtain at the same time enough extra cash to satisfy the extra demands for cash in circulation and till money. Now, in a preceding section we calculated that the excess reserves held by the member banks in June, 1917, plus the additional reserve deposits acquired other than by transfer of reserves as described, amounted to approximately \$967,000,000, for the years 1917-1920. Applying the 10 to 1 ratio, we obtain the sum of \$9,670,000,000, as representing the expansion of member bank deposits made possible by this use of reserve bank credit. The actual increase in member bank deposits was \$11,614,000,000 during this period. Since, however, the number of member banks increased greatly during these three years as the result of the conversion of non-member banks into member banks, this sum exaggerates the degree of expansion that actually occurred. A considerable part of this apparent increase represents the original deposits of the non-member banks when they joined the system. A better picture of the actual expansion of commercial bank credit is presented by the total increase in deposits

TABLE XI. BANK LOANS AND INVESTMENTS IN THE UNITED STATES *

(Figures for year ending June 30, in millions of dollars)

Item	1917	1918	1919	1920	1921	1922	Increase, 1917-20	
							Millions of dollars	Per cent
Loans:								
Member banks ..	9370	13233	15114	19533	18119	17165	10163	108.5
Non-member banks . . .	11140	9158	9297	11290	10852	10567	150	1.3
Total — All banks	20510	22392	24710	30824	28970	27732	10314	50.3
National banks .	8992	10165	11027	13637	11979	11193	4615	51.7
Investments:								
Member banks	3083	5274	6827	6026	6002	7017	2943	95.5
Non-member banks	1693	1147	5033	4835	5028	5207	142	8.0
Total — All banks	7777	9121	11860	10861	11029	12224	3084	39.7
National banks	3013	3957	5048	4186	4025	4563	1173	38.9
Loans and investments:								
Member banks .	12453	18507	22242	25559	24121	24182	13106	105.2
Non-member banks	15833	13306	14330	16125	15880	15774	292	1.8
Total — All banks	28287	31813	36570	41685	39999	39956	13398	47.1
National banks ..	12005	14122	16075	17823	16004	15756	5818	48.5

* National bank statistics from *Statistical Abstract of the United States*, 1929, p. 268. All others from *Annual Report of the Federal Reserve Board*, 1928, p. 111.

of the three classes of commercial banks — national banks, state banks, and trust companies. The total expansion of deposits of these three classes of banks from June 30, 1917, to June 30, 1920, was \$10,083,000,000, just \$403,000,000, or 4.1 per cent, more than the calculated potential expansion. The fact that a considerable proportion of these banks were not member banks either at the beginning of the period or at the end of it, probably did not much affect the total credit expansion possible on the basis of a given expansion of reserve bank credit, since, as already stated, the only ultimate source of expansion was this reserve bank credit, and so much of it as was utilized by the non-member banks percolated to them through the loan and investment operations of the member banks. And the more of it that the non-member banks thus obtained indirectly, the less there was left for the member banks.

The total increase in deposits of all banks — member banks and non-member banks combined — as given in Table X on page 568, includes the increase in the deposits of stock and mutual savings banks and private

banks, and does not, therefore, reflect as truly as the figures just given for commercial banks the true expansion in deposit currency of the country. The increase in savings banks deposits amounted to \$1,120,000,000, and if this amount is subtracted from the increase for all banks, a figure is obtained just a little greater than the total increase for the three classes of commercial banks combined. The small discrepancy is accounted for by the deposits of private banks. But whether we take the increase in the deposits of all banks combined, or of the three classes of commercial banks combined, or merely of the member banks, the increase in every case is comparatively close to the potential increase calculated on the basis of an expansion of \$10 in member bank deposits for every dollar of excess cash reserve held originally or acquired by them during the period under consideration.

11. CALCULATED POTENTIAL AND ACTUAL EXPANSION OF BANK LOANS AND INVESTMENTS

As a check on this method of calculating potential expansion of member bank *deposits* with the actual expansion that occurred, we may use the following method of calculating the potential expansion of *loans and investments* of commercial banks and compare this potential expansion with the actual expansion that occurred. In Chapter XXII we arrived at the conclusion that for every dollar of excess cash reserves held by the reserve banks, an expansion of credit by member banks of approximately \$12 in the form of loans and investments was possible. This figure was based on the assumptions that average minimum cash reserves against deposits of the member banks was 10 per cent, and that drainage of cash into circulation and the requirements for till money of the banks were such that the reserve banks would need to advance \$1 50 in reserve notes to the member banks for every dollar advanced in the form of reserve deposits.

Now, during the three-year period under consideration the *cash reserves* of the reserve banks increased by \$969,000,000, while their *excess reserves* declined by \$383,000,000. Consequently, they used up during this period \$1,352,000,000 of excess reserves. But during this period they had to issue about \$1,157,000,000 of reserve notes to replace that much other money lost from circulation, and the required gold reserve of 40 per cent of this amount, or \$463,000,000, reduced the amount of excess reserves used for credit expansion to \$889,000,000. Multiplying this figure by 12, we get \$10,668,000,000 as the total expansion in loans and investments of member banks, or commercial banks, made possible by the operations of the federal reserve banks.

This falls \$2,730,000,000 short of the total increase in loans and investments of all banks in the country — member banks and non-member banks combined, amounting to \$13,398,000,000. Most of this excess can be accounted for by the increase in loans and investments of savings banks amounting to about \$1,100,000,000, and by an increase of \$893,000,000 in the capital and surplus of all banks from June 30, 1917, to June 30, 1920. The increase in loans and investments of savings banks may properly be omitted from a consideration of expansion of commercial bank credit representing inflation of the currency; and the increase in capital and surplus of the commercial banks represents a source of loan and investment expansion not traceable, at least directly, to reserve bank credit expansion. If these two items, aggregating \$1,993,000,000 be subtracted from the \$13,398,000,000 increase in loans and investments of all banks, we have left a balance of \$11,405,000,000, just \$737,000,000, or 7 per cent, more than our estimated potential expansion based on the excess reserves used up during the period by the member banks — an estimate which was stated to represent a minimum rather than a maximum.

12. THE ALLEGED JUSTIFICATION AND THE RESULTS OF INFLATION

Having considered in detail the extent of reserve bank credit and member bank credit inflation during the period from June, 1917, to June, 1920, and having explained why the latter was dependent almost entirely upon the former, it remains to consider the reasons why the federal reserve authorities desired bank credit inflation and the results of this inflation when it came. The Secretary of the Treasury, when we entered the war in April, 1917, whole-heartedly adopted the policy of inflation as the most expedient method of financing the war. This inflation was to be accomplished, not by the issue of inconvertible government paper money, the method of inflation used during the Civil War, but through the medium of expansion of federal reserve bank credit extended to member banks by means of discount and open-market operations and reflected in a great expansion of federal reserve note circulation and member bank reserve deposits. The purpose of inflation was twofold. On the one hand, it provided the banks with funds to be used in the purchase of government bonds; and on the other hand, it provided them with funds to be used in financing business operations on a rising price level. The two purposes were closely interrelated.

Against the advice of many reputable economists, the Secretary of the Treasury decided to finance the war primarily by sale of United States bonds rather than by heavy taxation, and he won Congress over

to his point of view. The bonds had to be sold either to the general public or to the banks, or both. In order to induce the public to buy bonds liberally, it was deemed advisable for the banks to lend generously to bond-buyers, and to accept the bonds purchased as collateral for the loans. In order to induce the banks themselves to buy bonds on a large scale and to advance loans to their customers with which to buy bonds, it was considered desirable for the reserve banks to lend generously to the member banks, accepting the government bonds as collateral for the loans, both as collateral for the member banks' discounted customers' notes under the original provisions of the Federal Reserve Act of 1913 and as collateral for the member banks' own promissory notes under the amendment of September, 1916. The government received payment for the bonds thus issued and sold in the form of bank deposits subject to check, and its buying power, or command over commodities and labor, was correspondingly increased. In so far, however, as the purchase of the bonds was accomplished by means of expansion of bank credit, it did not result in a reduction of the commodity and labor buying power in dollars of the purchasers. They had just as many dollars in cash or bank deposits left with which to buy commodities and labor as before. This expansion of the currency and this placing of two buyers in the market for goods and labor where there had been only one before was bound to cause a rise in prices unless there was a corresponding expansion in the quantity of goods and labor available, and no such expansion was possible, particularly in view of the fact that millions of laborers were being drafted into the army and thus removed from industrial activities. The inevitable rise in prices, far from being unwelcome, was a desirable outcome from the point of view of the inflationist policy of financing the war. It stimulated business activity to the utmost and kept all available labor employed in the production of goods for military and other purposes, and the great profits keyed up the business men to do their best for dollars and country. Thus the Government was assured of a great supply of goods with which to win the war, even though the penalty was a rapidly mounting war debt for goods purchased at higher and higher prices. Some effort was made to keep the rise in prices from getting quite out of bounds by fixing maximum prices for various products during the war, notably in the case of wheat and corn, a lasting cause of grievance to the farmers, who were thus prevented from "profiteering" to the utmost during the period of inflation, although suffering most extremely from the inevitable period of deflation.

Whether or not the deliberately managed inflation and enormous

bond issues for goods bought at inflated prices represented the best means of financing the war, or whether inflation was necessary to win the war, remains a debatable question. But whatever opinion one may hold on this point, there can be but little doubt that inflation did an immense amount of damage to the country, and was continued long after the war ended, when it was indefensible. And there are good reasons for doubting that inflation actually achieved such great expansion of industrial production as to have justified its use. To support this point of view, some additional facts will be presented relating to bank credit expansion and some statistics will be given bearing upon the rise in prices and the effects of inflation upon industrial activity.

TABLE XII. PRICES AND INDUSTRIAL PRODUCTION IN THE UNITED STATES:
1917-1922 *

Item	Year						Change, 1917-20 (per cent)
	1917	1918	1919	1920	1921	1922	
Price index of 20 basic commodities: (1913 = 100)							
June	221	205	205	289	121	141	+ 30.8
Average for year..	198	205	209	253	130	139	+ 27.8
Retail food price in- dex (1913 = 100)							
June	152	162	184	219	144	141	+ 44.1
Average for year..	146	168	186	203	153	142	+ 39.0
General price index (1913 = 100)							
June	142	153	170	199	162	158	+ 40.1
Average for year..	139	157	173	193	163	158	+ 38.8
Standard's Index of Industrial Pro- duction (Normal of January 1923 = 100)							
Average for year..	99.9	97.0	89.9	94.2	71.6	93.2	- 5.7

* *Standard Statistical Bulletin*, 1930-31. Published by Standard Statistics Company. Basic commodity price index and index of general prices, original source, Federal Reserve Bank of New York. Retail food price index, original source, United States Bureau of Labor Statistics.

The table on Bank Deposits in the United States on page 568 shows that between June, 1917, and June, 1920, deposits of all banks increased 43.1 per cent, and deposits of the three classes of commercial banks — national banks, state banks, and trust companies — increased 49.2 per cent. The table on Bank Loans and Investments on page 569 shows that total loans and investments of all banks increased 47.4 per cent in

the same period. Now, as compared with these increases in bank deposits and bank loans and investments, we find, as shown in Table XII on Prices and Industrial Production, that the index of general prices rose 40.1 per cent from June, 1917, to June, 1920, and that the index of industrial production not corrected for secular trend fell 5.7 per cent during the same period. These figures, to say the least, do not indicate that inflation was particularly efficacious in stimulating production of goods. Its energy, on the contrary, seems to have been directed toward the raising of prices exclusively. This conclusion is, however, not quite fair, since we must bear in mind that several millions of men were taken out of industrial activity and drafted into the army, so that industrial production perhaps did well to come as near holding its own from 1917 to 1920 as the figures indicate. Yet in 1920 a good share of the men taken out of industry and into the army had returned to work, and inflation was still on — the break did not come until the middle of 1920.

If, instead of the index of general prices for June, 1917, and June, 1920, we take the index showing the average for each of the two years, the result is little different — the increase for the average of the year 1920 over the average of the year for 1917 was 38.8 per cent. The index of basic commodities during this period rose less and the index of retail food prices rose more than the index of general prices, but the latter is probably the best measure of the effect of inflation on prices.

There is considerable doubt that inflation as a method of financing the war was justified on the assumption that it facilitated the sale of government bonds and stimulated industry. Conscription of industrial plants and labor would probably have yielded more effective results in production of goods, and would not have left the country burdened after the war with such enormous war debts and such disastrous maladjustments of prices as resulted from the policy of inflation.

The rise in prices just referred to, it must be remembered, was piled on top of great increases that had already occurred between 1913 and 1917 — increases for which the war policy of the Federal Reserve Board and reserve banks cannot be held responsible. Since the general level of prices in June, 1917, was already, as indicated in our table, 142 per cent of the 1913 level, a 40.1 per cent increase on top of that was a 57 per cent increase on the basis of 1913 as 100 per cent. Of the total rise in general prices of 99 per cent from 1913 to June, 1920, 57 per cent, or more than half, occurred during the period when credit expansion was practically completely under the control of the Federal Reserve Board. Similar remarks apply to the rise in prices of basic commodities and retail food prices.

While basic commodity prices rose only 30.8 per cent from June, 1917, to June, 1920, this increase raised the index based on 1913 prices as 100, from the already high level of 221 in June, 1917, to 289 in June, 1920, almost a threefold increase in eight years. The retail food price rose from 152 per cent of the 1913 level in June, 1917, to 219 per cent of the 1913 level in June, 1920, the prices of many food products, of course, increasing in much greater ratio. Among the evils immediately resulting from this inflation were the increased cost of living to persons living on more or less fixed incomes, the maladjustments of prices that resulted from some prices rising more rapidly than others, the growth of speculation in securities, commodities, and real estate, and the development of extravagant tastes and notions of superiority in persons benefiting more or less accidentally from the inflation in the way of higher wages, profits, or rents.

13. DEFLATION

When the time came to decide between calling a halt on inflation and abandoning the gold standard, the banking officials chose to retain the gold standard. They probably did not intentionally set in motion the machinery of deflation. But, as previously explained, deflation sets in automatically upon the heels of inflation when, for any reason, inflation ends. At the top of a period of expansion a great part of the demand for commodities, real estate, and securities is represented by the demand on the part of speculators for the rise, many of whom are overextended. When credit expansion ceases, prices cease to rise, and some speculators unload. Prices drop, and every drop precipitates additional selling on all the speculative markets, causing further declines, and more selling, and so on in the vicious circle of deflation.

The decline in commodity prices and industrial production following the inflation period of 1914-1920 was embraced almost wholly in the period from June, 1920, to June, 1921, and the extent of this decline is fairly represented by the statistics given in the table of Deflation Statistics on page 576. In some cases the high point of production and prices came before June, 1920, and in some cases the low point came after June, 1921. But the June figures are near enough to the high and low in all cases to make the various deflation statistics fairly comparable, even though they do not represent the absolute high or low in each case. The figures selected for our Deflation table reflect many of the typical evils of a period of deflation, and may be briefly considered to advantage.

Beginning with the top section of Table XIII, it may be observed

TABLE XIII. DEFLATION STATISTICS: 1920-1922 *

Item	June 1920	June 1921	June 1922	Decline from June, 1920, to June, 1921 (per cent)
Wholesale commodity price indexes: U.S. Bureau of Labor Statistics (1926 = 100)				
All commodity index.....	166.5	93.4	96.3	43.9
Non-agricultural products.....	165.2	96.9	97.1	41.3
Farm products.....	167.4	80.6	92.8	51.9
Raw materials.....	166.0	81.2	93.5	51.1
Finished (manufactured) products	156.7	100.7	97.5	35.7
Index of farm prices: U.S. Depart- ment of Agriculture (1909-1914 = 100)				
All farm commodities.....	234	110	128	53.0
Grains.....	283	117	111	58.7
Meat animals.....	182	105	121	42.2
Cotton and cottonseed.....	301	78	160	74.1
Index of factory employment: Federal Reserve Board (1923-1925 = 100)..	110.9	81.3	89.5	26.7
Index of factory payrolls.....	125.2	76.1	80.4	39.2
Production statistics				
Steel ingot: daily average in thou- sands of tons.....	136.1	41.1	120.3	69.8
Copper: 1000 short tons....	52.8	9.7	47.6	81.6
Bituminous coal: millions of tons ..	46.1	34.6	23.1	24.9
Gasoline: million barrels.....	9.9	10.3	12.5	(inc.) 4.0
Wheat — annual production:				
Acres harvested, millions	61.1	63.7	62.3	(inc.) 4.3
Yield, millions of bushels	833.0	814.9	867.6	2.2
Average weekly freight car loadings, in thousands.....	860	765	842	11.0

Bank credit statistics: Comparable statistics are found in the tables on pages 561, 568, and 569. The table on Money in Circulation in the United States on page 567 may also be compared with the statistics in this table.

* All statistics in this table except those on wheat acreage are taken from the compilations of the *Standard Statistical Bulletin*, 1930-1931, where the original sources are indicated.

that the decline in the All Commodity index from June, 1920, to June, 1921, was from 166.5 to 93.4, or, on a percentage basis, 43.9 per cent. But agricultural products declined more sharply, to the extent of 51.9 per cent, while non-agricultural products declined less sharply, the decline here being only 41.3 per cent. These figures indicate, but minimize, the decline in the farmer's purchasing power. The products which the farmer buys — non-agricultural products — declined less in price than the products which he sells. But the decline in his buying power was much greater than the spread between a decline of 41.3 per

cent and a decline of 51.9 per cent indicates. The indexes are those of wholesale prices. The decline in farm prices was relatively greater than the decline in wholesale prices, because the farm price is the wholesale price less the cost of transportation to market. If, for example, the wholesale price of wheat in Chicago is \$2, and the freight rate is 20 cents, the farm price may be \$1.80. If, now, the wholesale price drops to \$1, and the freight rate remains the same, the farm price drops to 80 cents. The drop in the wholesale price is 50 per cent, but the drop in the farm price is 55.5 per cent. For similar reasons the prices the farmer pays at retail for the things he buys drop less rapidly than the prices of these things at wholesale.

The second section of the table throws more light on the decline in prices of farm products, since it shows the decline of the prices of these products on the farm. Here it is seen that the decline ranged from 42.2 per cent for meat animals to 74.1 per cent for cotton and cottonseed. The decline for grain was in between the extremes, at 58.7 per cent. Obviously, the money income of the grain and cotton farmers shrank in much greater proportion than their costs of production and their cost of living — represented largely by prices of non-agricultural products.

The explanation for the relatively greater decline of agricultural prices, as compared with the prices of non-agricultural products, is found in large measure in the production statistics in the fourth section of our table. Manufacturing industries, particularly if they are monopolized, as the iron and steel and copper industries, curtail output sharply when demand declines during a period of deflation and thus maintain prices on a higher level than would be possible otherwise. Highly competitive industries like agriculture do not curtail production. In agriculture the seasonal nature of production is a complicating factor aside from the condition of unbridled competition. Once the crop is planted, restriction of output lies largely outside the control of the farmer — the size of the crop then depending upon the nature of the season. A third factor tending to maintain production in agriculture at a high level during depressions is the fact that nearly all costs of the landowning farmer are indirect or constant — even labor costs, since if the labor of himself and his family is not devoted to production of farm crops, it largely goes to waste. Outside employment is difficult to find at most times, and practically impossible to find when sharp curtailment of industrial production has swollen the army of the unemployed.

Note that the production of steel ingots fell 69.8 per cent and the production of copper 81.6 per cent from June, 1920, to June, 1921, while

the number of acres of wheat harvested was actually 4.3 per cent greater in 1921 than in 1920, and this crop was all sown after the industrial depression had settled down on the country and the price of wheat had broken violently. The total wheat yield fell slightly because of a decline in the yield per acre.

Because the more highly competitive industries curtailed output less than the manufacturing industries, the total physical volume of trade slumped less violently than might have been expected — car loadings fell only 11 per cent during the year. Obviously, if agriculture and coal-mining had curtailed to the extent of the steel and copper industry, car loadings would have declined much more severely. On this point more will be said in the next two chapters.

Not only does a period of deflation bring a spread between the prices of agricultural and non-agricultural products, and between products of monopolized and non-monopolized industries, but it brings a spread between the prices of raw materials and the prices of finished products, as shown in the first section of our Deflation Statistics table. Raw materials declined in price 51 per cent from June, 1920, to June, 1921, while finished products declined only 35.7 per cent. A partial explanation of this difference is that the demand for consumers' goods remains more persistent and declines less rapidly than the demand for producers' goods after the depression sets in.

The third section of Table XIII represents a phase of depression so familiar that it hardly needs to be mentioned — namely, the decline in factory employment and payrolls. As the factories, whether by monopolistic agreement or otherwise, restrict output rather than accept the alternative of a sharp decline in prices of their products, many employees are discharged, and others are placed on part time; wages at the same time are cut, since workmen are then in too weak a strategic position successfully to oppose a reduction in pay. Because of the cut in wages and the part-time employment, payrolls decline more rapidly than factory employment. During the year in question, it will be noted that factory employment dropped only 26.7 per cent, while factory payrolls declined 39.2 per cent.

Every index of price or production in the Deflation Statistics table points to a misfortune for someone. The sharp decline in prices of commodities in general meant huge inventory losses to practically all business men, whether manufacturers, wholesalers, or retailers. And these losses on inventory were multiplied by the fact that during the slump in prices stocks of goods on hand were mounting as sales diminished. To the already large stocks on hand many business men were receiving

additions as orders given before the break in prices were being filled. Many of the less scrupulous business men evaded this difficulty by cancelling orders, but this merely threw the burden of the unsold stock on hand back upon the firm which had undertaken in good faith to fill the order.

The farmers, unable to restrict output, suffered the most severe decline in prices, and their money income fell much more sharply than their necessary costs of production and living expenses, making it impossible for many of them to meet their obligations, and throwing thousands into bankruptcy, particularly those who had unwisely bought more land than they could pay for during the boom in farm lands of 1919 and early 1920. Manufacturers suffered less from falling prices because they curtailed output, but their gross earnings were cut the more sharply because of their curtailed production, while their overhead expenses, including interest on bonds and taxes, did not decline in proportion. Naturally, many were forced into bankruptcy as were many retailers caught with large stocks of goods on hand which they were unable to sell at the prices paid for them.

A decline of 26.7 per cent in factory employment meant, of course, the discharge of several million employees, many of whom remained without work for months, and some of whom never regained their position in industry. The decline of 39.2 per cent in payrolls meant hardship for many families, too many of whom had but slender incomes even during the period of war and post-war prosperity. The railroads suffered from the decline in traffic, but had some compensating advantages in a reduction in costs of operation and continued high freight rates.

The decline in the cost of living was welcome to consumers of all classes, but the wage-earners as a class found the cost of living declining less than their payrolls, and the farmer's cost of living remained relatively higher than his money income. Persons enjoying fixed money incomes from such sources as government bonds, sound corporation bonds, and mortgages and steady salaries gained substantial advantages from the decline in the cost of living and increased buying power, but many of them suffered losses in investments which offset these gains.

On the whole, deflation was unwelcome. The decline in prices of commodities, securities, and real estate, the vast amount of unemployment and the cuts in wages and salaries, and the thousands of business failures and some hundreds of bank suspensions created a great amount of dissatisfaction, and the people began that search for the villain responsible for the misfortunes of deflation which is characteristic of all

our periods of deflation. There developed a strong inclination to make the Federal Reserve Board and the reserve banks the scapegoats in the case — the Reserve Board, the reserve banks, and the New York bankers representing the embodiment of the "money power" in 1920.

14. THE RESERVE BANKS AND DEFLATION: 1920-1921

The cold facts, as contrasted with the heated arguments of the congenital inflationists, do not support the contention that either the reserve banks or the member banks deflated agriculture, business, and the speculative markets in securities, real estate, and commodities during the deflation years of 1920 and 1921. The facts point quite plainly to the conclusion that the speculators, agricultural and otherwise, and business men vigorously deflated one another in a hurried effort to step out from under when the speculative structure erected with their support collapsed. The most that can be truthfully charged against the Federal Reserve Board and the reserve banks in this respect is that late in 1919 and more decisively early in 1920 they began to resist the pressure for further inflation, when further inflation would almost certainly have resulted in the abandonment of the gold standard. In December, 1919, the Federal Reserve Bank of New York raised the discount rate on paper secured by United States Treasury certificates from 4.25 to 4.75 per cent, and most of the other reserve banks increased the rate from 4.25 to 4.5 per cent in November or December of that year. There were similar small increases in the rate of discount on other types of paper at this time. Late in January, 1920, rates at all reserve banks were advanced. These advances were followed by additional advances until in some cases the rate was increased to 7 per cent in May and June, 1920.

Aside from this general increase in discount rates, the inflationists had a special source of grievance in the so-called "progressive rate" applied by the Reserve Banks of Atlanta, Dallas, St. Louis, and Kansas City, under the provisions of the Phelan Act. The progressive rate was applied to member banks of these districts as a penalty for excessive use of reserve bank credit. It is obvious that when a reserve bank's reserve ratio is near the minimum, and it can extend but a limited amount of additional credit to its member banks, every dollar of credit obtained by one member in excess of its fair share reduces the amount available to some other member below its fair share. A formula was, therefore, devised by means of which each bank's fair share could be calculated, and banks requesting loans in excess of this amount were penalized by an extra charge in excess of the normal discount rate, the

extra charge increasing with the amount of the excess loans. It was alleged that some banks were charged rates ranging from 10 to 87.5 per cent, but as a matter of fact comparatively few banks paid such rates and then only on a small part of their excess borrowings. The average rate of discount for the districts in which the progressive rates were applied was lower in some cases than the average rate in other districts. The fact that the four districts in which the progressive rates were applied were all agricultural districts appeared to afford a basis for the charge that the "money power," in the guise of the Reserve Board, the reserve banks, and the Wall Street bankers, was deflating agriculture.

Admitting that the Reserve Board and the reserve banks started the deflation ball rolling by discouraging further inflation through advancing the discount rate substantially during the first half of 1920, let us pass on to examine some more statistics of deflation, and note whether or not they support either the view that the member banks deflated business and agriculture, or that the reserve banks deflated the member banks, and thereby deflated business and agriculture.

15. DEFLATION IN SPECULATION AND BUSINESS PRECEDED BANK DEFLATION

It has previously been shown that deflation both of business and bank credit was practically completed between June, 1920, and June, 1921. If, now, the tremendous decline in commodity prices and business activity and the breaks on the stock market had been preceded or accompanied by equally sharp deflation of member bank and reserve bank credit, there would be some ground for assuming that bank credit deflation was cause and business deflation effect. If we observe the statistics for June, 1920, and compare them with those for June, 1921, we might conclude that there actually had been this cause-and-effect relation. If, however, we interpose between the figures for June, 1920, and those for June, 1921, a third set showing conditions as they had gradually developed up to December, 1920, we are forced to the conclusion that both reserve bank credit and member bank credit deflation were the result, rather than the cause, of business and speculative deflation, for in this case effect can hardly have preceded cause.

Observe in Table XIV that in December, 1920, total bills discounted by reserve banks for member banks exceeded the amount in June, 1920, by nearly \$300,000,000, while total reserve bank credit outstanding, as represented by total earning assets, had increased \$80,000,000 during this six-month period. Obviously, this does not appear to indicate that

TABLE XIV. BANK CREDIT AND BUSINESS ACTIVITY IN
THE UNITED STATES: 1920-1921

Item	June, 1920	December 1920	June 1921
Federal reserve banks: *			
Total bills discounted (millions of dollars)	2,432	2,719	1,751
Total earning assets (millions of dollars)	3,183	3,263	2,051
Member banks' reserve (millions of dollars)	1,832	1,749	1,604
Federal Reserve note circulation (millions of dollars)	3,117	3,345	2,648
Member bank statistics, in millions of dollars: †			
Loans	19,533	19,555	18,119
Investments	6,026	5,976	6,002
Total — loans and investments.	25,559	25,531	24,121
Total deposits	25,401	24,220	23,350
Money in circulation: ‡			
Total in millions.	5,468	5,612	4,911
Wholesale price indexes: §			
All commodity index	166.5	120.7	93.4
Farm products index.	167.4	104.6	80.6
Index of farm prices:			
All farm commodities	234	140	110
Grains	283	138	117
Cotton and cottonseed	301	101	78
Index of factory employment	110.9	90.3	81.3
Index of factory payrolls	125.2	99.6	76.1
New York Times average prices of 25 in- dustrial stocks, dollars per share:			
High	113.2	91.2	83.7
Low	107.5	76.6	69.1

* Last week of the month figures, from *Annual Report of the Federal Reserve Board*, 1922.

† Call dates, June 30, 1920; December 29, 1920; June 30, 1921. *Ibid*, 1928.

‡ End of month figures.

§ Indexes of prices and of factory employment and payrolls, from *Standard Statistical Bulletin*, 1930-1931.

the reserve banks had deflated the member banks, even though the latter's reserve account with the reserve banks had declined during this period from \$1,832,000,000 to \$1,749,000,000. Neither does an increase in the amount of federal reserve notes in circulation from \$3,117,000,000, in June, 1920, to \$3,345,000,000 in December, 1920, seem to indicate a villainous plot on the part of reserve banks to deflate the country, particularly in view of the fact that the total amount of money

in circulation increased also during this period from \$5,468,000,000 to \$5,612,000,000.

Turn next to the question of whether the *member banks* deflated business, agriculture, and the stock market, by curtailing credit. From June to December total loans of member banks to their customers rose slightly from \$19,533,000,000 to \$19,555,000,000, investments declined slightly, and total loans and investments fell from \$25,559,000,000 to \$25,531,000,000, or \$28,000,000, or a little more than one tenth of 1 per cent. Total deposits declined more substantially, from \$25,401,000,000 to \$21,220,000,000, or a little more than 4 per cent, this decline being the result in part probably of the withdrawal of deposits by frightened depositors or by persons out of work to defray living expenses. At any rate, none of these figures indicates a great deal of deflation. In contrast are the declines in commodity prices, factory employment and payrolls, and industrial stock prices. From June to December the all commodity price index fell 46 points, or more than 25 per cent; the farm products index fell 63 points, or 37.5 per cent; the index of farm prices fell 91 points, or 40.2 per cent; the index of grain prices fell 145 points, or 51.2 per cent; the index of cotton prices, 200 points, or 66.5 per cent; the index of factory employment fell 18.6 per cent, and of factory payrolls, 20.4 per cent. As for the prices of industrial stocks, their deflation had begun long before, in November, 1919, and they suffered another decline of 19.5 per cent from the high of June to the high of December, 1920. In the face of these statistics it seems rather absurd to attribute the deflation in prices and the decline in industrial activity from June, 1920, to December, 1920, to deflation of bank credit. Federal reserve bank credit, member bank credit, and money in circulation during this period of sharply declining prices and business activity either increased or decreased only slightly. The deflation came from within the price and business structure, not from the banks. This is not to say that restriction of bank credit cannot and will not cause declines in prices and industrial activity, but merely to point out that it did not do so in 1920. The price collapse became inevitable when the reserve banks halted inflation, a step they had to take to preserve the gold standard; it received impetus from post-war crises developing in foreign countries, particularly in Japan and Germany, and from falling prices the world over. If as a result of the sharp decline in prices, our banking structure had become so undermined that banks had failed in great numbers, and a banking panic had developed with runs on banks in cases, and withdrawals of large sums of cash quite general, the banks would have resorted to more drastic deflation — scaling down of loans

and investments — and this would have intensified the deflation and prolonged the ensuing depression. As it was, deflation of bank credit, except in the case of some of the weaker banks, was mild — and by June, 1922, bank deposits were already greater than a year before, while loans and investments had begun to recover.

Business expansion and recovery in commodity prices came also in 1922, as may be observed from the statistics in Table XIII. Most of the indexes in that table stand higher in June, 1922, than in June, 1921, at which time they were near the bottom.

16. CAUSES OF THE PROMPT RECOVERY

Space does not permit here an extended analysis of the causes of the prompt recovery from the crises and depression of 1920-1921. It may be stated, however, that recovery was aided by the fact that the banking structure was not so severely shaken that widespread forced liquidation of loans and investments set in. Even at the bottom of the depression bank loans, deposits, and investments stood not very far from the top for all time, relatively speaking. There was no such stunning crumbling of prices of stocks and bonds as during the depression of 1929-1933. Only those business enterprises were forced to the wall that had expanded incautiously on borrowed funds during the height of the boom. The decline in farm prices did not utterly destroy the purchasing power of the farmers, since many of them had prospered abnormally during the preceding years of high prices, and could live for a while on their "fat." They had paid off debts and had money in the bank. The wage-earners who lost their jobs in many cases had Liberty bonds which they could sell to meet necessary expenses. Buying power declined less than farm income and wages, so that depression in industry and unemployment did not become so serious as it might otherwise have become. Then a great foreign demand for American products soon developed, stimulated by American loans to foreign buyers. Finally, the great shortage in buildings of all kinds that had developed during the war quickly set in motion a building boom. In short, conditions generally favored a quick recovery from the sharp collapse of prices and business activity. The very suddenness of the decline in itself favored a speedy recovery. The decline was overdone probably because of an uneasy feeling everywhere that a severe post-war collapse was inevitable.

CHAPTER XXIV

THE SECOND PERIOD OF INFLATION: 1923-1929

1. INFLATION AS COMMONLY UNDERSTOOD

THE term "inflation" is commonly associated with a sharp general rise in commodity prices accompanied or followed by a similar rise in money wages. Such a rise in prices and wages, for reasons already discussed, tends to generate rising profits, and thus justifies higher prices for corporation common stocks on the basis of increased earnings per share. It tends also to justify higher prices for income-producing real estate on the basis of the larger income yielded by such property — a general doubling of prices and costs of production tending to result in a doubling of net income on such property, even though costs rise exactly in proportion to prices. If, for example, the value of the crop on a piece of agricultural land is \$10 an acre, and the cost of production is \$6, the net income is \$4. But if the value of the crop doubles and cost doubles, the net income grows to \$8. Should the rise in costs lag behind the rise in the price of the product, as it tends to do, the net income will more than double when the price of the product doubles, and the price of the land may rise more rapidly than the price of the product produced upon it.

A general rise in the prices of commodities and wages of labor tends also to justify a rise in the prices of income-producing property on the basis of increased cost of production or reproduction. The plant and equipment of a manufacturer may have cost \$1,000,000, but a doubling of commodity prices and wages would cause the cost of duplicating it to rise to \$2,000,000. This increase in cost alone would not directly cause the income produced by it to increase in proportion. But it would protect the owner of the plant from competition by plants newly constructed by competitors so long as his own earnings did not represent a fair return on twice the original cost of his plant, and by thus affording him protection in large measure from competition would permit him to enjoy the large earnings accruing more or less naturally from the growing spread between the value of his product and his costs of production that is typical of a period of rising commodity prices.

A general rise in commodity prices is, therefore, commonly accompanied or shortly followed by a rise in the prices of real estate of all sorts and a sharp rise in the prices of common stocks, particularly common

stocks of corporations having relatively large issues of bonds or preferred stocks outstanding, with the common stock representing merely equity ownership, often of an attenuated character. During such a period of inflation there develops a great deal of speculation in three more or less distinct fields — common stocks, real estate, and commodities. It is inflation of this type that grows out of the financing of wars, as in the case of our own Civil War, and more recently the World War. The rise in commodity prices is caused by the combination of the great additional demand for commodities represented by the war demand, and the expansion of the volume of paper money and bank credit. In terms of the Equation of Exchange, MV plus $M'V'$ equals PT , M or M' , or both of them, are increased, while T , the physical volume of trade, remains unchanged or increases but little. P , or the level of prices, must therefore rise unless V , or V' declines, and both of these factors are, on the contrary, more likely to increase than to decline under the excitement of war psychology and war demand.

2. INFLATION WITH DECLINING COMMODITY PRICES

But while rising commodity prices are typical of periods of inflation and are commonly used as an index of the extent of inflation, it is possible by improper expansion of money and bank credit to generate inflation and its major evils without a general rise in commodity prices. The rise in prices and the speculation may be centered in securities and real estate. This was the case in the seven-year period of inflation in the United States from 1923 to 1929. During this period the trend of wholesale commodity prices was mildly downward, while money wages on the average rose comparatively little. Yet the Standard Statistics Company's Weekly Index of 404 common stocks showed a range from a low of 63.7 in 1923 to a high of 228.1 in 1929, an increase of 258 per cent in six years, or an average increase of 43 per cent a year, uncompounded. No corresponding index of the rise in real estate prices is available, but in many parts of the country urban real estate enjoyed a boom comparable to the spectacular rise in the price of stocks, the peak of the boom in various sections coming at different times, and in many cases antedating the climax of the rise in stocks.

To most persons the concept of inflation accompanied by a period of slowing declining commodity prices seemed paradoxical, and many denied the existence of a state of inflation until the overextended structure of credit came tumbling down about their ears, and some continued for a time to deny it even then. A careful examination of statistics of bank credit and speculation shows clearly, however, that from 1923

to 1929 inclusive, there developed in the United States one of the most gigantic orgies of inflation and speculation based on inflation in the whole history of money and banking. In the following pages of this chapter the nature, the causes, and the results of this inflation will be discussed in some detail.

3. REASONS FOR CHOOSING 1923 AS THE BASE YEAR

It will be convenient to begin the discussion of this period of inflation with a brief consideration of the reasons for choosing 1923 as the base year from which to measure the degree of expansion in business and speculative activity and bank credit. The year 1921 might logically have been used as the base year, since in this year the bottom of the post-war depression was reached in business activity, stock prices, and bank credit. The year 1922 might also have been logically chosen, since by the middle of 1922 recovery from the depression was well under way, and expansion after this date might well have been considered as marking the beginning of a new period of inflation rather than merely recovery from the preceding period of deflation.

By the middle of 1923 activity in many lines had fully made up the losses of the depression of 1921, and in some respects 1923 may be considered to have been a year of abnormally great activity, and for this reason it might not seem desirable to use the statistics of business and financial activity of this year as bases upon which to calculate the degree of expansion in the following period of inflation. But it is for this very reason that the writer has chosen 1923 as a base year. It is desired to emphasize the importance of the extraordinary expansion of bank credit during this period, and there is no better way of doing so than to measure the expansion from the peak year 1923, when bank credit expansion had more than made up the losses of the crisis and depression of 1920 and 1921, to the peak year 1929, six years later. There is perhaps nothing reprehensible in bank credit expansion marked in character if it follows merely as a natural reaction from a preceding sharp deflation. But what can be said in favor of bank credit expansion which resulted in a doubling of bank deposits and of loans and investments in a period of six years, 1914-1920, and after a sharp recession made up this loss and more than made it up by 1923, and then piled up an additional increase of approximately 33 per cent in deposits and in loans and investments during the next six years? What, if anything, may be said in defense of such an expansion of bank credit piled upon expansion of bank credit depends upon other economic and financial developments during the period of expansion. It will be interesting, then, to note in

such detail as is possible within reasonable limits of space what occurred during the period from 1923 to 1929 in the economic activities of the United States in general.

4. EARNINGS, BOOK VALUE, AND PRICES OF STOCKS

While the speculative orgy that culminated on the New York Stock Exchange in October, 1929, carried the prices of the majority of common stocks far above the level that could be reasonably justified either on the basis of the book value of the property they represented or their probable future earning and dividend-paying power, a very considerable rise in the prices of most common stocks was apparently justified during this period on the basis both of book value and prospective earning power.

The period from 1923 to 1929, inclusive, was, in the United States, one of more or less sustained prosperity for most of the corporations whose stocks were listed on the New York Stock Exchange. With minor setbacks in 1924 and 1927, business activity and commodity prices remained unusually stable, so that toward the end of this period there was much talk among business men and by some economists about a new era in which crises and depressions had become things of the past. During this long period of stabilized prosperity the earnings and dividend payments of American corporations steadily increased, year after year, in the aggregate, the total dividend payments, as compiled by Standard Statistics Company, rising from an average per month of \$80,270,000 in 1923, a very prosperous year, to an average per month of \$245,000,000 in 1929, an increase of 205 per cent. In the case of many of the stronger concerns the rate of increase was even greater. In the opinion of investors and speculators this great increase in earning power justified a great rise in the prices of common stocks, and a higher investment rating for the senior securities of the corporations — bonds and preferred stocks.

The ultimate basis of valuation of any investment or income-yielding property is the prospective future income capitalized at a yield which takes into consideration its certainty and stability. A guaranteed perpetual income of \$1 a year, if the current rate of return expected on such an income is 4 per cent, will be valued at twenty-five times the annual income, or \$25. If, however, there were little assurance that the income would continue after the first year, the valuation placed upon it would be but little more than \$1. Estimates of probable future income yielded by any investment are based primarily upon past and present earning power and secondarily upon cost of reproduction of the income-yielding property. The longer the earning power has been sustained without a serious break and the greater the tendency that has existed for

it to increase, the more assurance there seems to be of its continued existence and expansion. The conditions that existed from 1923 to 1929, therefore, tended to cause investors and speculators alike to bid the prices of common stocks confidently upward — not only were the earnings expanding rapidly, but the long-continued rise in earning power and dividend payments seemed to afford justification for the belief that a steadily rising income was assured. Under the circumstances the majority of buyers believed that the prices of common stocks might reasonably rise in even greater proportion than the income yielded, since the income was every year increasing not only in size but in certainty, so that it might logically be capitalized on a lower-yield basis.

It was toward the end of this period of expanding earnings and unbounded optimism that a great speculator became the unofficial spokesman for the whole speculative movement by declaring that good common stocks should sell for not less than fifteen times annual earnings — that is, on less than a 7 per cent yield basis. The tendency for prices of common stocks to rise more rapidly than actual dividends paid upon them is shown by the fact that the average dividend yield on the market prices was, in 1926, 4.96 per cent, while by September, 1929, before the first stock market crash, the yield had fallen to 2.92 per cent.¹ The yield calculated on earnings, and not on dividends paid, would, of course, have been higher at both dates, but would also have been much lower in September, 1929, than in 1926.

While the increase in the amount of earnings and dividends and the apparent increase in the certainty of such earnings and dividends were the chief reasons for the rise in security prices, the book value of the common stocks in large measure supported the higher prices in some cases. During the period from 1923 to 1929 the general commodity price level had apparently become stabilized somewhat above 140 per cent of the pre-war level, and the cost of building at more than 190 per cent of the pre-war level, so that the cost of reconstructing industrial plants was much greater than the original cost of those built before the war. During the period of war and post-war prosperity many industrial concerns had not only made good the depreciation of their plants during the period, but had "plowed" in large earnings, so that they had plants actually larger and with greater capacity of output than before the war. On a book value basis their common stocks were worth a great deal more than before the war. This was true, for example, of such concerns as United States Steel, American Can, and General Electric.

These great book values would have justified very high prices for

¹ Annual Supplement to the *Survey of Current Business*, 1931, pp. 218-19.

stocks during and immediately after the war, and the stock market boom of 1919 did begin to discount the large book values, but this stock market boom was cut short by the crisis of 1920, which swallowed up earnings, and the stock market temporarily neglected the great book values until they were once more supported by the primary consideration of large earnings and dividends after 1923. These book values alone, as previously stated, could not assure the corporations large earnings, but the high cost of duplicating the existing plants did prevent the going concerns from severe competition by new capital when their earnings began to mount in the years 1923 to 1929.

5. SOURCES OF LARGE CORPORATE EARNINGS

We may consider next the conditions which made it possible for a large proportion of all our corporations — industrials, rails, and utilities — to realize extraordinarily large earnings and to pay enormous dividends without a serious break over a period of seven years in the absence of the most common source of such general prosperity, namely, rising commodity prices. These great earnings arose from a large and sustained demand for the products of industry at fairly stable prices accompanied by a persistent and substantial decline in unit costs of production. Costs were cut by greater efficiency in production developed primarily through the increasing application of labor-saving machinery.

Had competition been working effectively during this period, the reduction in costs and the rising profits would have tended to bring about expansion of output and price-cutting. But competition in many, if not in most, industries was throttled by combinations, dominating concerns, price agreements, trade associations, and other monopolistic devices. Such open, and in many cases avowed, restraint of trade was obviously in violation of our anti-trust laws, but the Government adopted the attitude that compulsory competition was inexpedient and might become ruinous. It was believed that it was wiser to permit the industrialists to restrict competition to the extent of "adjusting supply to demand," to the end that stability of prices might be maintained. "Fair prices," it was believed, would make possible "fair wages" and fair wages would provide the wage-earners with the purchasing power requisite to maintain the demand for the goods produced in the factories.

While competition among going concerns was thus severely restrained, the large profits realized did not tempt a great deal of new capital into new enterprises, for two reasons. First, it is difficult to secure the large amount of capital now necessary in most industries to build up a new concern on the large scale required to compete successfully with the

old established concerns. Secondly, the high cost of building — almost double the pre-war cost — made it hazardous to embark on the process of building a new plant from the ground up. The high cost of building was a result of a combination of circumstances. A shortage of building had developed during the time we were engaged in the war, when building operations were restricted not only by high costs, but by direct restrictions applied by the Federal Government. The building trades were exceptionally well organized and enforced union wages effectively in most urban centers. Finally, the building material industries were very successful in maintaining abnormally high prices for their products by means of trade associations and other devices.

As for the railroads and public utility corporations, their rates were fixed by law, and the former were to a large extent, and the latter were almost completely, protected from competition. Rates remained high, and while business was active their earnings naturally expanded when they, along with the industrial concerns, made increasing use of labor-saving devices and thus cut costs of production.

Statistics do not indicate that the years from 1923 to 1929 represented, as seems to be generally believed, a period of rapidly expanding physical volume of production. Undoubtedly some industries did expand rapidly, particularly those catering to the growing demand for luxury products. But statistics reflecting the whole field of production and trade, such as those shown in Table XV, lend little support to the notion that output was rapidly expanding. The Federal Reserve Board index of industrial production rose only from 101 in 1923 to 119 in 1929, an increase of 17.8 per cent, or less than 3 per cent a year uncompounded. This represents what is generally considered a normal rate of growth in industry, and not an extraordinary rate. The index of freight car loadings rose only from 100 in 1923 to 106 in 1929, an increase of 6 per cent, or 1 per cent a year. Even though an increasing volume of freight was moving by truck on the highways, the total increase in freight hauled was still not abnormally great. As against these moderate increases, there was an actual decline in the index of factory employment from 104 in 1923 to 101 in 1929, and this leads us to a consideration of the essential unsoundness in the economic conditions prevailing in the latter part of the period 1923-1929, quite generally believed at the time to have been unusually sound.

6. ARTIFICIAL NATURE OF THE 1923-1929 PROSPERITY

When the manufacturing industries during this period were reducing costs by the increasing use of labor-saving machinery and processes,

they selfishly and short-sightedly undertook to retain for themselves nearly all the advantages that accrued from such cutting of costs. With some exceptions, they neither increased wages substantially nor much reduced prices. Restricting output to the quantity they could sell at "fair prices" and at a large profit involved the discharge of part of their employees — the demand for their products not increasing in proportion to the increased productivity of labor. Thus "technological unemployment" became a troublesome problem.

TABLE XV. PRODUCTION STATISTICS: 1923-1929 *
(1923-1925 = 100)

	1920	1923	1924	1925	1926	1927	1928	1929	Change, 1923-29 (per cent)
Federal Reserve Board: Index of industrial production	87	101	95	104	108	106	111	119	+ 17.8
Index of building contracts awarded (value)	63	84	94	122	129	129	135	117	+ 39.3
Index of factory em- ployment	108	104	96	100	101	99	97	101	- 2.9
Index of freight car loadings	91	100	97	103	106	103	103	106	+ 6.0

* Annual Report of the Federal Reserve Board, 1931, p. 201.

Theoretically, according to principles of orthodox economics labor-saving machinery does not tend in the long run to displace labor, because reduction in costs resulting from the use of such machinery is followed shortly by competitive price-cutting which increases the demand for the product. The final result is that as much labor is employed as before and a larger quantity of goods is produced and sold at lower prices. There is no fundamental defect in this reasoning, but it simply does not apply when for competition there is substituted the process of artificial price maintenance by some sort of monopolistic device or by governmental control.

The more or less successful attempt to maintain prices by concerted agreement from 1923 to 1929 so restricted demand and production that factory employment declined — the index of factory employment dropping from 104 in 1923 to 101 in 1929. While the decline in the number of workers was offset in some measure by an increase in money wages paid to the workers retained, this increase in wages was not in proportion to the increase in output per worker. As against an increase in the index of industrial production of 17.8 per cent, the actual average increase in the weekly earnings of factory workers in New York State, for example,

was only 10.3 per cent from 1923 to 1929. Factory payrolls increased during this period by the moderate amount of 4.9 per cent. In short, taking these various facts into consideration, we are driven to the conclusion that factory payrolls did not increase in proportion to factory output, and that the purchasing power of the factory workers declined relatively to the quantity of goods produced.

TABLE XVI. UNITED STATES PRICE AND COST STATISTICS: 1923-1929 *

	1920	1923	1924	1925	1926	1927	1928	1929	Change, 1923-29 (per cent)
U. S. Bureau of Labor Statistics Indexes (1926 = 100):									
All commodity index	154	101	98	104	100	95	98	97	- 4 0
Non-agricultural products index	155	101	97	101	100	94	95	94	- 6 9
Farm products index	151	99	100	110	100	99	106	105	+ 6 1
Federal Reserve Bank of New York In- dexes (1913=100):									
Cost of building .	234	194	191	193	195	189	190	195	+ 0 5
Building wages	188	201	214	218	226	229	231	237	+ 17 9

* Statistics quoted from *Standard Statistical Bulletin*, 1930-31

TABLE XVII. INDEXES REFLECTING DISTRIBUTION OF INCOME IN THE UNITED STATES: 1923-1929 *

	1920	1923	1924	1925	1926	1927	1928	1929	Increase, 1923-29 (per cent)
Federal Reserve Board index of factory payrolls (1923-25 = 100)	118	103	96	101	104	102	102	108	4.9
Cost of living index of National Industrial Conference Board (1914 = 100)	197	161	163	168	168	164	162	161	0.0
Actual average weekly earnings of factory workers in New York State, dollars	28 2	27.2	27.7	28 3	29 0	29.3	29.4	30 0	10 3
Average monthly cor- poration dividend payments (millions of dollars)	81 8	80 3	84.4	89.3	141	175	193	245	205 1

* All statistics, except Federal Reserve Board Index, from *Standard Statistical Bulletin*, 1930-31.

This conclusion holds for similar reasons in the case of the railroads and public utilities. Here, too, improved processes and labor-saving machinery resulted in a decline in the number of laborers employed

relative to the quantity of goods or services produced, and here, too, there resulted neither a substantial decline in the price of the product nor a rise in money wages. Meanwhile, similar developments were taking place in retail trade, where the chain store systems were in large measure displacing the less efficient individual stores of the small merchants. How little all these improvements in methods of production and the resulting reduction of costs of production were reflected during this period in retail prices is indicated by the cost-of-living index of the National Industrial Conference Board, which stood at 161 per cent of the 1914 level in 1923 and still stood at that level in 1929 — meanwhile having been for the most part somewhat higher.

The industrial corporations, by their price and wage policies during the period 1923 to 1929, were thus steadily undermining the demand for their products by a persistent nibbling at the purchasing power of their employees to whom a very large proportion of their products would have to be sold if sold at all. At the same time these price and wage policies were exercising a depressing effect upon agricultural and other industries in which for various reasons the policy of restricting output and artificially maintaining prices could not be put into effect.

In agriculture, as in manufacturing, labor-saving devices were being increasingly applied during their period, notable examples being the farm tractor for drawing plows, harrows, drags, cultivators, etc., and the combine-harvester, which revolutionized the harvesting of wheat in many sections. These labor-saving devices, unaccompanied by any agreements among producers to maintain prices by restricting output, resulted in an expansion of output in the various countries producing an exportable surplus of farm products, including the United States. At the same time international trade barriers and the craze for self-sufficiency and the monopolization of the domestic market by domestic producers hampered the export of such commodities. The result was a long-continued depression in the prices of farm products.

The price and wage policies of the manufacturing, public utility, and railroad corporations were not, of course, wholly responsible for the depression in agriculture, but they were an important contributing factor. They hurt agriculture in two ways. First, the relatively high prices maintained in industry and the high railroad rates increased the farmers' cost of production and their cost of living. Secondly, the policy of restricting output and maintaining prices injured the farmers by reducing the demand for their products, both directly as raw materials for the manufacturing industries and as consumption goods purchased by the wage-earning class. In short, the price maintenance policies of the

industrialists tended to increase the spread between the farm prices of the agricultural products and the prices of the goods the farmers bought. They destroyed in large measure the farmers' purchasing power. Statistically this is shown by price indexes of the United States Department of Agriculture, quoted in Table XVIII. With the price level of 1909-1914 representing 100, the average annual index of farm prices of all farm commodities ranged during the period, 1923-1929, from a low of 131 in 1927 to a high of 147 in 1925. In 1923 it stood at 135, and in 1929 at 138. During the same period the index of farm cost of living and production — that is, the index of the prices of things the farmer had to buy — ranged from a low of 153 in 1923 to a high of 166 in 1926. During the whole period the ratio of the prices received by the farmers to the prices paid ranged from a low of 81.9 in 1926 to a high of 92.5 in 1925. In 1923 this index of the farmers' purchasing power stood at 88.2 and in 1929 at 89.

TABLE XVIII. UNITED STATES FARM STATISTICS: 1923-1929 *

	1920	1923	1924	1925	1926	1927	1928	1929	Increase, 1923-29 (per cent)
U.S. Department of Agriculture indexes (1909-14=100):									
All farm commodities.....	205	135	134	147	136	131	139	138	2.2
Farm cost of living and production.....	206	153	154	159	166	154	156	155	1.3
Ratio of prices received to prices paid.....	99.5	88.2	87.0	92.5	81.9	85.1	89.1	89.0	0.9
Taxes on farm property.....	155	246	249	250	253	258	262	267	8.5

* All statistics in this table from United States Department of Agriculture Yearbook, except the ratios of prices received to prices paid, which are derived by dividing the farm commodity index by the farm cost of living and production index.

On the average the farmers' purchasing power during this seven-year period was more than 10 per cent less than it would have been if the 1909-1914 "parity" of prices had prevailed. This was bad enough; but to make matters worse, taxes on farm property during this whole period remained on a level ranging from 246 per cent to 267 per cent of the pre-war level and almost twice as high as the price of farm products relative to the pre-war level. Naturally, the farmers' power to buy and pay for products of industry was severely curtailed even in the absence of heavy mortgage and interest payments hanging over from

the period of wild speculation in farm land during the land boom of 1919 and 1920.

Similar considerations, varying in some details, apply to other industries not capable of applying the principle of "adjusting supply to demand"; as, for example, the bituminous coal industry, and to some degree the petroleum industry. During the period of apparent prosperity of 1923 to 1929, then, the purchasing power of wage-earners in industry, and of most persons dependent for their living upon agricultural products, bituminous coal, and some other products produced under competitive conditions, was falling steadily short and making it increasingly difficult for manufacturers to find a market for their output at what *they* considered fair prices — that is, cost of production plus "a fair profit."

TABLE XIX. EXCESS EXPORTS AND FOREIGN CAPITAL ISSUES IN THE UNITED STATES: 1923-1929 *

(in millions of dollars)

	1920	1923	1924	1925	1926	1927	1928	1929	Total 1923-29
Excess of exports over imports.....	2950	375	981	683	378	681	1037	841	4976
Foreign capital issues	497	421	969	1076	1125	1337	1251	671	6850

* Export statistics from *Statistical Abstract of the United States*. Foreign capital issues from *Annual Report of the Federal Reserve Board*, 1931, p. 199

7. STAVING OFF INEVITABLE COLLAPSE

The foregoing analysis indicates that the prosperity of manufacturing, railroad, and public utility corporations reflected in greatly expanded earnings during the years 1923 to 1929, was of an exceedingly precarious nature, artificially sustained and bound to collapse when artificial expedients became powerless to sustain it. Some careful students of the situation expected a collapse long before it came in 1929. That the collapse was postponed for so long was in large measure owing to the support afforded by three artificial props — the installment plan, American loans to foreign countries, and paper profits of the stock market boom, each of which needs to be briefly considered.

The installment plan of financing the purchase of consumers' goods, such as automobiles, radios, household appliances of various sorts, and wearing apparel, was developed during these years of prosperity on an unprecedented scale. In substance this was a plan to permit wage-earners and other persons with limited incomes temporarily to spend more than twelve months' income in one year. This temporarily ex-

punded the purchasing power of the masses and afforded a greater market for manufactured products, but only at the expense of the purchasing power of these people at some time in the future when the limit of their indebtedness had been reached. The danger involved in the plan was at once perceived by many economists and prophecies of eventual disaster were not lacking. But the advocates and the temporary beneficiaries of the installment plan of financing consumer sales professed to believe that the increased demand flowing from such purchases led to increased production, lower costs, larger payrolls, and increased consumer purchasing power, and that there would consequently be no day of reckoning when demand would collapse while consumers ceased buying and started to pay their debts. For obvious reasons the arguments of those economists who supported the installment plan received more publicity than the arguments of those who opposed it.

Some part of the surplus production of both our farms and factories found a market in foreign countries. During the seven years 1923-1929, the excess of exports over imports of merchandise amounted for the United States to almost five billions of dollars, a rather surprising favorable balance of trade in view of the fact that our country had become a great creditor nation to whom foreign countries were paying on balance hundreds of millions of dollars annually in interest on debts. The explanation of this state of affairs is found largely in the foreign capital issues floated in the United States during the same period to the amount of almost seven billions of dollars. It was these vast loans, which were later to turn out to be in large part bad debts, that permitted us to sell to foreigners goods worth billions of dollars more than the amount we bought from them, and thus temporarily to prevent our own markets from being glutted with goods unsalable for lack of consumer purchasing power. There came the day of reckoning, however, when our bankers and investors refused to pour more funds into the foreign investment markets, and when the foreigners were faced with the necessity of restricting their purchases from us or of selling us more goods, or of defaulting on the interest payments on their old debts. Unable to increase their sales to us because of our high and rising import duties, they restricted purchases in our markets and in some cases defaulted on the bond issues which they had floated in our markets.

The third of the artificial props to demand requires little discussion. Naturally, during a long-continued rise of stocks with only minor and occasional setbacks many people — both speculators and staid investors — enjoy the exhilarating experience of watching the value of their investments or speculative holdings rise on the market. Whether they

sell on the rising market and reap a cash profit, or whether they hold and observe only great paper profits growing, they develop a sense of well-being and prosperity conducive to free spending. Doubtless cash and paper profits of the stock market boom were the source of billions of dollars spent for luxury articles and other goods during the latter part of the 1923-1929 period of inflation.

The artificial demand created by the installment plan, foreign loans, and stock market profits, together with the heavy volume of purchases made by certain favored and well-paid wage-earners sustained the demand for manufactured goods at a higher level and for a longer period unbroken by depression than ever before in our history. Had this prosperity been well-balanced; had it percolated to the agricultural industries and other highly competitive industries and to the unskilled laboring class; had it not been so highly concentrated in the hands of favored industries and favored classes of wage-earners, as those in the highly paid building trades, it would have been a cause for congratulation. But taken as it actually was, unbalanced, unsound, initiated by artificial price maintenance schemes, and sustained by the artificial props of the installment plan, unsound foreign loans, and stock market profits, it turned out to be merely the prelude to financial disaster.

8. STATISTICS OF SPECULATION

That a dangerous orgy of speculation culminated on the New York stock market in the autumn of 1929 is now well known. That speculation in 1927 to 1929 was developing on an unprecedented scale was even then well known. But while the speculative pot was boiling and profits were mounting, a very large proportion of the participants and beneficiaries, including executives of some of the largest banks and investment houses, refused to admit that the movement was assuming proportions endangering the soundness of the whole financial system of the country. Rather the protagonists professed to believe that nothing was taking place except a healthy discounting of a high level of business activity engendering great and rising profits. Few bothered to point out that the unbalanced prosperity, artificially sustained, was bound sooner or later to collapse, and those few who did utter warnings were listened to with impatience or dismissed with a contemptuous shrug.

The statistics of speculation, presented in Table XX, show clearly that speculation had developed to abnormally high levels two or three years before the crash, and to point out the danger in the situation now is not merely to show such wisdom after the event as was unreasonable to expect of the participants at the time. The danger signals were

startlingly distinct long before the crash. In considering the statistics of speculation from 1923 to 1929, it must be borne in mind that 1923 was not a year of depression, but a year of abnormal activity, and that by this time the country had made a complete recovery from the crisis and depression of 1920 and 1921, except for the unbalanced price structure to which reference has already been made. Bank deposits and bank loans and investments had risen above the tremendously high figures reached in the post-war boom which culminated in 1920.

TABLE XX. STATISTICS OF SPECULATION: 1923-1929 *

Item	1923	1924	1925	1926	1927	1928	1929	Increase, 1923-1929	
								Amount	Per cent
Standard Statistics Company index of common stock prices (404 stocks) 1926 = 100									
Weekly index range:									
Low	63.7	67.5	80.1	90.8	104.7	130.3	140.3	76.6	120.3
High	76.3	83.3	101.5	106.5	131.1	178.9	228.1	151.8	199.0
Stock sales on New York Stock Exchange (monthly average in millions of shares)	19.8	23.5	37.7	37.4	48.1	76.7	93.8	74.0	373.7
Bank clearings (monthly average in billions of dollars):									
United States outside of New York City	16.6	17.1	19.0	19.5	19.4	20.2	20.8	4.2	25.3
New York City	17.8	20.8	23.6	24.2	26.8	32.6	39.8	22.0	123.6
Bank debits in 141 principal cities (total for the year in billions of dollars)	463.7	491.7	570.1	608.0	673.9	806.4	935.0	471.3	101.6
Total for 140 cities not including New York City	225.3	228.2	256.7	268.9	282.3	306.2	331.9	106.6	47.3
Brokers' loans:									
Not borrowings on collateral in New York City as reported by members of New York Stock Exchange (millions of dollars on September 30)	(1923-1925 not available)			3219	3915	5514	8549		

* Index of common stock prices, stock sales, and bank clearings from *Standard Statistical Bulletin*, 1930-31; Bank debits from *Annual Report of the Federal Reserve Board*, 1931; Brokers' loans from *Annual Report of the Federal Reserve Board*, 1929.

From the low of 63.7 in 1923, the Standard Statistics Weekly Index of common stock prices had risen to a high of 134.1 in 1927, more than a 100 per cent increase. From this already high level it climbed further to an extreme high of 228.1 in 1929. From the high point of the boom

year 1923, 76.3, this represented a rise of 151.8 points, or 199 per cent. Among the 404 common stocks included in this index were many which had experienced a greater proportionate rise. Numerous corporation stocks were selling before the crash at such high prices that the dividend yield was less than half the yield obtainable on investments in United States government bonds, and even the yield based on net earnings was less than the actual income yielded by the safest bonds in the world. In short, the speculative prices were discounting imaginary earnings in the future greater on the average than the earnings of 1929, which were, for many corporations, the all-time high, except for one or two abnormally prosperous years during the World War.

There was no basis in sober reasoning for any such expectation, because the 1929 earnings in many cases already represented more than a reasonable return on the actual investment in plant and equipment and current assets. In the long run — and the stock market prices were discounting the long run — economic theory points clearly to the conclusion that earnings at the high level of 1929 cannot be maintained. As already stated, analysis of the source of the 1923-1929 earnings indicates that they were made possible by an unbalanced condition which eventually was bound to destroy them. This point is here emphasized to throw light on the folly committed by bankers in piling up a huge expansion of bank credit on the basis of nothing more substantial than the mushroom growth of stock market valuations, representing gross over-capitalization of temporarily high net earnings of corporations.

While stock prices were mounting into the skies, stock sales on the New York Stock Exchange were rising to unheard-of levels. Monthly average sales rose from 19,800,000 shares in 1923 to 48,100,000 in 1927, and further to 93,800,000 in 1929, an increase of 373.7 per cent, or more than 60 per cent a year. Compare this with what is generally considered the normal increase in industry and trade, 3 per cent a year. Compare these figures also with the actual increase in industrial production of 17.8 per cent, or with the increase in car loadings of 6 per cent during this same period of six years.

The extent to which stock market activities were affecting the operations of banks is indicated by the bank clearings and bank debits in New York City as compared with clearings and debits in the rest of the country. From 1923 to 1929 bank clearings outside of New York City increased 25.3 per cent, while bank clearings in New York City increased 123.6 per cent. At the same time, bank debits, which represent a more complete record of business activities than do bank clearings, rose from 225.3 billions in 1923 to 331.9 billions in 1929, in 140

cities not including New York, an increase of 106.6 billions, or 47.3 per cent. At the same time the increase in 141 cities, including New York City, was 471.3 billions, or 101.6 per cent. The increase in New York City alone was more than three times as great as the increase in the 140 other cities combined. Further light on the extent to which the financial resources of the nation were being drawn into stock market speculation is shown by the growth in brokers' loans from \$3,219,000,000 in September, 1926, to \$8,549,000,000 on September 30, 1929. Comparable figures for 1923 are not available. The participation of the commercial banks of the country in this speculative orgy on the stock market is reflected also in the loans on securities made by reporting member banks in leading cities, which rose from \$4,157,000,000 at the end of June, 1923, to \$7,332,000,000 at the end of June, 1929, an increase of 76.4 per cent, or 12.7 per cent a year. But the operations of the commercial banks during this period deserve special consideration. In fact, most of the material included in this chapter up to this point must be considered merely as introductory material presented to serve as a background for the following analysis of the operations of the commercial banks and the federal reserve banks. Our main interest is, of course, in the banking system, and our interest in corporation profits, stock market speculation, and agricultural depression, and other topics discussed in this chapter, is merely incidental to our interest in the banking system.

9. THE POSITION OF THE FEDERAL RESERVE BANKS: 1923-1929

There is little in the table of Federal Reserve Bank Statistics (Table XXI) to indicate that the resources of the federal reserve banks were being used to promote a tremendous inflation of commercial bank credit. While the figures given for each year are the average of daily figures for June, and represent neither the highs nor the lows of the respective years, they are fairly typical of the condition of the banks for each of these years, and no great differences in conclusions would follow if the highs and lows or the average for the year had been taken in each case instead of the average of daily figures for June. The June figures have been chosen for the sake of convenience in comparisons.

Consider first federal reserve bank credit outstanding. Total federal reserve bank credit had been greatly deflated from 1920 to 1923, the total having declined from \$3,382,000,000 in June, 1920, to \$1,178,000,000 in June, 1923, at which time it stood but little above the extreme low reached in the post-war depression. From this level it fluctuated

within relatively narrow limits, at no time showing any great increase. In June, 1929, the total was \$1,317,000,000, or only \$139,000,000 above the amount outstanding in June, 1923. In June, 1928, the total had been considerably higher, \$1,531,000,000. The extreme high figure for the seven-year period was reached in December, 1928, when the average of the month's daily figures reached \$1,824,000,000. The increase in this year from June to December was, however, less rather than more than the normal seasonal increase, so that the figures for June, 1928, as compared with June, 1923, represent a close approxima-

TABLE XXI. FEDERAL RESERVE BANK STATISTICS: 1923-1929 *

(Average of daily figures for June, in millions of dollars)

Item	1920	1923	1924	1925	1926	1927	1928	1929	Increase or decrease, 1923-29
Member bank reserve deposits.....	1853	1867	2001	2141	2206	2301	2355	2314	+ 447
Government deposits	34	36	43	42	12	21	13	30	- 6
Total deposits.....	1975	1931	2065	2209	2241	2355	2395	2374	+ 443
Federal reserve note circulation.....	3114	2247	1871	1660	1703	1718	1618	1667	- 580
Cash reserves.....	2103	3204	3247	2953	2976	3170	2728	3011	- 193
Excess reserves.....	166	1630	1776	1516	1510	1658	1243	1513	- 117
Reserve percentage..	41.3	76.7	82.5	76.3	75.4	77.8	68.0	74.5	- 2.2
Reserve bank credit outstanding:									
Bills discounted...	2456	741	370	437	473	429	1019	978	+ 237
Bills bought.....	400	224	50	263	243	205	244	99	- 125
U.S. securities....	347	153	416	345	408	398	232	179	+ 26
Other reserve bank credit.....	179	60	50	73	61	49	36	61	+ 1
Total.....	3382	1178	886	1118	1185	1081	1531	1317	+ 139
Factors of decrease:									
Monetary gold stocks.....	2854	4040	4471	4364	4438	4606	4119	4311	+ 271
Treasury currency (adjusted).....	1426	1738	1759	1744	1771	1777	1791	1779	+ 41
Factors of increase:									
Money in circulation.....	5448	4779	4830	4794	4881	4831	4736	4687	- 92
Member bank reserve balances..	1853	1867	2001	2141	2206	2301	2355	2314	+ 447
Non-member bank deposits, etc....	88	28	21	25	23	34	28	30	+ 2
Unexpended capital funds.....	273	282	264	266	284	298	322	376	+ 94

* Annual Reports of the Federal Reserve Board.

TABLE XXII. AVERAGE RATES EARNED BY FEDERAL RESERVE BANKS ON
BILLS AND SECURITIES *
(per cent)

	1920	1923	1924	1925	1926	1927	1928	1929
Total bills and securities	5.50	4.33	3.83	3.51	3.76	3.60	4.24	4.86
Bills discounted.....	5.88	4.46	4.25	3.67	3.95	3.83	4.56	5.03
Bills bought.....	5.66	4.14	3.31	3.17	3.55	3.49	3.97	5.00
United States securities	2.21	4.01	3.67	3.56	3.60	3.41	3.64	3.93

* Annual Reports of the Federal Reserve Board.

tion to the extreme expansion of federal reserve bank credit during this period. From June, 1923, to June, 1928, the increase was \$353,000,000.

While the expansion in federal reserve bank credit that occurred during this period undoubtedly facilitated the expansion of member bank credit, neither the expansion of \$139,000,000 in reserve bank credit from 1923 to 1929, nor the greater expansion of \$353,000,000 from 1923 to 1928, alone can account for the expansion in member bank credit reflected in the statistics of deposits, loans, and investments presented in Tables XXIII and XXIV, pages 611, 617. The expansion in member bank deposits subject to reserve requirements from June, 1923, to June, 1929, was \$7,858,000,000, or more than 56 times the increase in reserve bank credit during the same period, and more than 22 times the larger increase in reserve bank credit from June, 1923, to June, 1928. It is obvious that other factors than expansion of reserve bank credit were operating to bring about the enormous expansion in member bank credit, and the still greater expansion of all commercial banks combined. What these factors were will be considered in a moment. But here we must note some other federal reserve bank statistics.

It may be observed that the total reserve bank credit outstanding tends to fluctuate relatively less than the items making up this total, namely, bills discounted for member banks, bills and securities bought in the open market, and "other reserve bank credit," the latter presenting a group of small items of no great importance. While it is the total reserve bank credit outstanding that measures the degree to which the reserve banks are taking part in inflation or deflation of bank credit, the constituent items throw more light upon the source of desire for inflation or deflation. If the member banks are taking the initiative in bringing about expansion of credit, the results will tend to be shown in heavier borrowing at the reserve banks and an expansion in bills discounted. If the reserve banks are encouraging expansion, the re-

sults will be shown in an increase in bills and securities bought in the open market. Now Table XXI and Chart I indicate that up to 1928 such expansion of reserve bank credit as occurred was represented

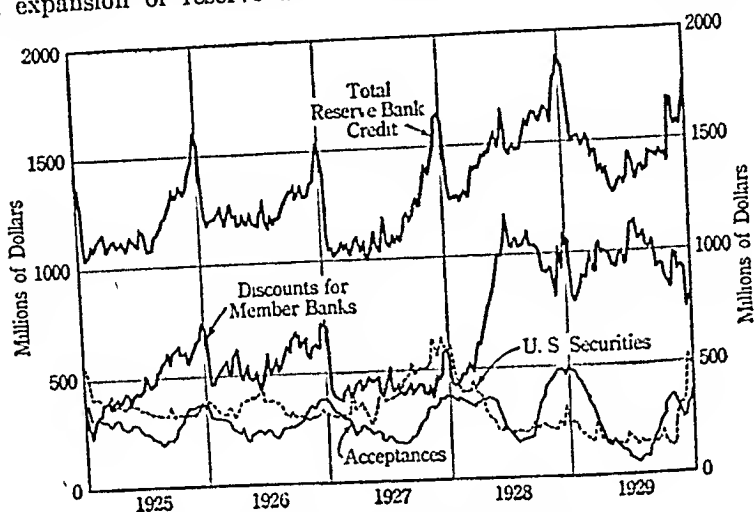


CHART I. RESERVE BANK CREDIT

This chart is based on weekly averages of daily figures; latest figures are for week ending December 28

From the *Federal Reserve Bulletin*, January, 1930.

primarily by open-market purchases of bills and securities, while bills discounted showed no definite upward trend. Beginning in 1928, however, the amount of bills discounted mounted rapidly, while bills and securities bought declined. All this indicates that during the early part of the period of bank credit expansion, the federal reserve banks favored, or at least did not discourage, expansion, but that beginning early in 1928 they no longer favored expansion, but took active measures to discourage expansion by reducing the amount of their holdings of bills and securities bought in the open market.

There is no simple explanation of this change in policy of the Federal Reserve Board and the reserve banks, but the following seem to have been the chief considerations. The first, although perhaps not the most important, consideration to be noted is that the reserve banks, to earn their operating expenses and a fair rate of return on the money invested in their stock by the member banks of the system, must have a minimum of earning assets of about \$1,000,000,000 when the yield is not over 4 per cent. Should the total of bills discounted and bills and securities bought fall below this figure, the reserve banks either

would have to curtail their expenditures or run the danger of operating at a loss. This factor alone would tend to cause the reserve banks to increase their purchases of bills and securities in the open market whenever the bills discounted by the member banks fell in amount so low that total earning assets declined below \$1,000,000,000. It is unfortunate that this factor should enter into the determination of reserve bank credit policy, since there may be occasions when reserve bank credit should be contracted below the amount required to pay operating expenses of the reserve banks and of the Federal Reserve Board. The reserve banks should not hesitate then to contract operations and to draw upon accumulated surplus to cover their operating losses.

A second consideration affecting the amount of reserve bank credit from 1923 to 1928 was the apparent desire of the Reserve Board to use reserve bank credit as a stabilizer of business conditions, and to err on the side of a superabundance of reserve bank credit rather than on the side of a deficiency. The Federal Reserve Board assumed, for a time at least, that so long as there developed no tendency for excessive speculation in commodities and a rise in commodity prices there was no reason to conclude that reserve bank credit was being issued in excess or used with inflationary effect. Business was not to be denied ample credit for all legitimate purposes.

In the latter half of 1927 the Federal Reserve Board and the federal reserve banks embarked upon "an easy-money" policy for the double purpose of encouraging the export of gold to assist foreign countries in re-establishing or maintaining the gold standard and of stimulating business which at the time was somewhat depressed. This easy-money policy involved the simultaneous purchases of substantial amounts of acceptances and United States securities in the open market, at a time when the amount of bills discounted for member banks was also rising, while at the same time the discount rate of the Federal Reserve Bank of New York was reduced from the already moderately low rate of 4 per cent to 3.5 per cent, with a corresponding reduction in the open-market rate on bankers' acceptances. The result was an increase of more than \$600,000,000 in reserve bank credit outstanding from the end of May to the end of December of 1927. Although this easy-money policy was well-intentioned, it was more effective in stimulating further speculation on the stock market than in maintaining sound monetary conditions abroad. It was this result of its easy-money venture — apparently unexpected by the Federal Reserve Board — that caused the reversal in its credit policy.

Fearful that the stock market speculation would get out of hand

and precipitate a crisis, the Reserve Board, after January, 1928, instituted the policy of reducing reserve bank holdings both of acceptances bought in the open market and United States securities, departing from this policy only to allow for seasonal variation in the demand for funds, until the stock market crash in October, 1929. But while the Board sought to restrict credit through a contraction of open-market operations of the reserve banks, it permitted further expansion in the form of bills discounted for member banks. While the reserve banks now desired contraction, the member banks desired expansion for the purpose of pursuing their profitable policy of expanding their already enormously inflated loans and investments. Three times during the first half of 1928 the Federal Reserve Bank of New York raised its discount rate by one half per cent, until in July it stood at 5 per cent, and the open-market rate on bankers' acceptances was raised proportionately. From July 13, 1928, to August 9, 1929, the discount rate remained at 5 per cent, but with speculation growing ever wilder and more dangerous to the financial stability of the country, the New York Reserve Bank obtained permission of the Reserve Board to raise the rate a full per cent to 6 per cent on August 9. The effectiveness of this increase was nullified, however, by the failure to increase the buying rate of acceptances. This rate, which had been above the discount rate, was actually decreased somewhat, so that, while bills discounted declined under the impact of the 6 per cent rate, bills bought increased. What the member banks were refused at the front door of reserve bank credit, they obtained at the back door. Speculation with reserve bank funds could not be ended without closing both ways of access to reserve bank credit. All this is clearly shown on Charts I and II, on pages 604 and 607. In addition to other measures designed to restrain the flow of reserve bank credit into speculative channels, the Federal Reserve Board made ineffective efforts to apply the direct-pressure method of denying reserve bank loans to member banks with unduly heavy brokers' loans.

The foregoing discussion indicates that while the Reserve Board and the reserve banks did not intentionally embark upon a policy of dangerous credit expansion, they nevertheless facilitated the expansion that took place from 1923 up to the end of 1927. When their easy-money policy in 1927 added fuel to the speculative fire already raging, they became alarmed, but did not succeed in taking effective measures to check the conflagration, which required a great deal more of cold water than the authorities were willing and able to throw upon it. They failed signally in preventing a most unsound financial condition from

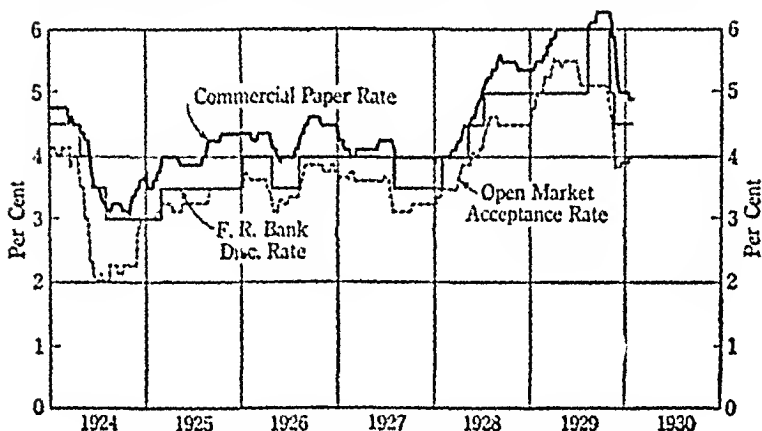


CHART II. MONEY RATES IN NEW YORK CITY

From the *Federal Reserve Bulletin*, February, 1930.

developing. Yet, as already stated, expansion of federal reserve bank credit alone cannot account for the tremendous expansion in commercial bank credit, which will be discussed in a later section.

10. FACTORS OF DECREASE AND INCREASE IN RESERVE BANK CREDIT

It should be observed that, while expansion of reserve bank credit may be made the basis of expansion of member bank credit, because such expansion of reserve bank credit tends normally to result either in an increase in member banks' reserve deposits or in federal reserve notes in circulation, the actual limit on credit expansion of member banks is the amount of their reserve deposits. And fluctuations in the total amount of reserve bank credit may be different both in amount and in direction from fluctuations in member banks' reserve account. This is true because several factors other than member banks' reserve balances affect the total amount of reserve bank credit outstanding. What these factors are is shown in Table XXI on page 602, under the headings of "Factors of decrease" and "Factors of increase."¹ Factors of increase are money in circulation, member bank reserve balances, non-member bank deposits, etc., and unexpended capital funds. An increase in any of these factors is reflected in an equal increase in reserve bank credit unless this increase is offset by a change in some other factor. Factors of decrease are monetary gold stocks and treasury currency. An increase in either of these factors is reflected in a decrease in total reserve bank credit unless this increase is offset by a change in

¹ A detailed explanation of these factors is given in the *Federal Reserve Bulletin*, July, 1929, pp. 432-38.

some other factor. The algebraic total of the factors of increase less the algebraic total of the factors of decrease equals the increase or decrease in reserve bank credit. For example, the total increase in the four factors of increase from 1923 to 1929 was \$451,000,000, and the total increase in the factors of decrease was \$312,000,000. The difference was \$139,000,000, the amount of increase in reserve bank credit.

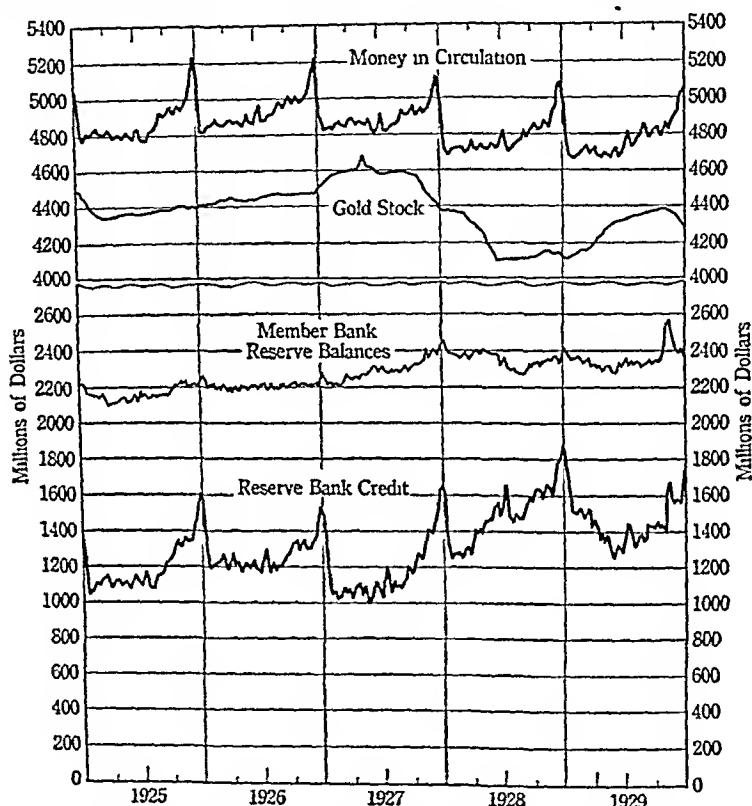


CHART III. RESERVE BANK CREDIT OUTSTANDING AND
PRINCIPAL FACTORS IN CHANGES

Based on weekly averages of daily figures; latest figures are for week ending December 28
From the *Federal Reserve Bulletin*, January, 1930

It may be noted now that, while the total increase in reserve bank credit from June, 1923, to June, 1929, was only \$139,000,000, there occurred during the same interval a much larger increase in member bank reserve balances which represent the real limitation on member bank credit expansion, the increase here having been \$447,000,000.

DECREASE AND INCREASE IN BANK CREDIT 609

That this great increase in reserve balances was not reflected in an equal increase in reserve bank credit was due mainly to the fact that it was offset by an increase of \$271,000,000 in monetary gold stocks, and an increase of \$11,000,000 in treasury currency in circulation, and a decrease of \$92,000,000 in the total amount of money in circulation (outside the Treasury and the reserve banks). The significance of these three factors in their relation to total reserve bank credit and member bank reserve balances may be made more clear by the following statements: When gold flows into the country, it tends to be deposited in the member banks, which thereupon tend to deposit it in the reserve banks, thereby increasing their reserve balances by an equal amount, or, perhaps, reducing their debts to the reserve banks, and consequently the reserve bank item of bills discounted, and the total amount of reserve bank credit outstanding. Likewise, an increase in treasury currency tends to result in more cash being deposited in member banks, and by them transmitted to the reserve banks, with results similar to those that follow from an increase in monetary gold stocks. Should any part of the additional gold or treasury currency remain in circulation, it would represent an increase in the factor of increase, "money in circulation," offsetting proportionately the factors of decrease, "monetary gold stocks" and "treasury currency."

In the 1923-1929 period the total amount of money in circulation actually decreased \$92,000,000, while gold stocks and treasury currency increased \$312,000,000. If no other changes had occurred in the factors of reserve bank credit except this decrease in money in circulation and this increase in gold and treasury currency, it would have been possible for the member banks to increase their reserve balances by the amount of \$101,000,000, without increasing their debt at the reserve banks and without an increase in the amount of reserve bank credit outstanding either in the form of bills discounted or of bills and securities bought in the open market. Likewise it would have been possible for the member banks, without reducing their reserve balances, to pay off \$101,000,000 in bills discounted, or to purchase that amount of securities from the reserve banks, and thus to reduce the amount of reserve bank credit outstanding proportionately.

It follows from these various considerations that one cannot measure the amount of credit expansion permitted to member banks merely by the expansion in reserve bank credit outstanding. One must consider also the various factors of increase or decrease in reserve bank credit, particularly the factors of monetary gold stocks, treasury currency, and money in circulation, any one of which may be a source of member

bank credit inflation while the total amount of reserve bank credit remains unchanged or actually declines. During the period from 1923 to 1929, for example, the reserve banks would have permitted a considerable expansion of member bank credit even though they had not expanded reserve bank credit by a single dollar. The member banks were able to finance their expansion from other sources. To have prevented member bank expansion on a dangerous scale, the reserve banks would have been compelled to resort to a drastic contraction of reserve bank credit, even to the point of reducing their earning assets below the minimum required to pay operating expenses and dividends on their stock.

The figures in Table XXI, on page 602, in several respects indicate a very conservative credit expansion policy on the part of the reserve banks. Not only did total reserve bank credit expand by the comparatively small amount of \$139,000,000 during the six years from June, 1923, to June, 1929, but during this whole period the reserve banks had heavy excess cash reserves — total reserves having been most of the time approximately twice the minimum amount required. In June, 1923, the reserve ratio was 76.7 per cent, and in June, 1929, it was 74.5 per cent, or only 2.2 per cent lower. At the latter date the reserve banks actually held slightly more than twice the amount of cash reserves legally required. These figures indicated strength in the banking system that it did not actually possess. That this is true will become evident when we proceed to our analysis of the position of the member and non-member banks.

11. EXPANSION OF BANK DEPOSITS: 1923-1929

In Table XXIII on Bank Deposits in the United States, on page 611, it may be observed that by June, 1923, deposits of all banks in the United States, exclusive of interbank deposits, had risen substantially above the figures for June, 1920, near the climax of the great inflation running from 1914 to 1920. Member banks and non-member banks alike had more than made up the losses in deposits resulting from the post-war deflation. In the next six years, from June, 1923, to June, 1929, member bank deposits increased from \$23,871,000,000 to \$32,284,000,000, or 35.2 per cent; non-member bank deposits increased from \$16,817,000,000 to \$21,567,000,000, or 28.2 per cent; and deposits of all banks, exclusive of interbank deposits, increased from \$40,688,000,000 to the huge total of \$53,852,000,000, a total increase of \$13,164,000,000, or 32.4 per cent. It is interesting to compare this increase piled up in a period of six years on an already enormous total with the total de-

posits of all banks in the United States on June 30, 1914, before the long period of inflation in bank deposits began. At that time total deposits amounted to only \$18,566,000,000. In six years the bank deposits of the United States, already tremendously inflated, had grown by an amount more than two thirds as great as all the bank deposits accumulated in the century and a quarter of our banking development up to 1914. This was certainly a remarkable rate of increase, the more so since during this period, as already indicated, no abnormal expansion in industrial activity occurred.

It is noteworthy that, while deposits of member banks grew some-

TABLE XXIII. BANK DEPOSITS IN THE UNITED STATES: 1923-1929 *

(Figures for year ending June 30, or nearest available date, in millions of dollars)

Item	1920	1923	1924	1925	1926	1927	1928	1929	Inc. or dec. 1923-1929	
									Amount	Per cent
Deposits exclusive of interbank deposits:										
Member banks...	21915	23871	25711	28440	29781	31269	32133	32284	+ 8413	+ 35.2
Non-member banks	15805	16817	17694	19172	19952	20393	21265	21567	+ 4750	+ 28.2
All banks.....	37721	40688	43405	47612	49733	51662	53398	53852	+ 13164	+ 32.4
Member banks deposits subject to reserve requirements:										
Net demand deposits.....	16422	16066	16838	18277	18804	19250	19191	18977	+ 2911	+ 18.1
Time deposits.....	5911	8378	9204	10381	11173	12210	13439	13325	+ 4947	+ 59.0
Net demand plus time deposits.....	22333	24444	26042	28658	29977	31460	32629	32302	+ 7858	+ 32.1
Ratio of time deposits to total deposits...	26 5%	34 3%	35 3%	36 2%	37 3%	38 8%	41.2%	41 3%		
Reserve with federal reserve banks...	1839	1871	1965	2191	2236	2280	2342	2359	+ 488	+ 26.1
Ratio of reserve to total deposits subject to reserve requirements...	8.2%	7 7%	7 5%	7 6%	7.5%	7.2%	7.2%	7.3%	- 0.4%	
Money in circulation (average of daily figures, June)...	5448	4779	4830	4794	4881	4831	4730	4687	- 92	
Ratio of money in circulation to total bank deposits...	14.4%	11.7%	11.1%	10 1%	9 8%	9.4%	8.9%	8.7%	- 3%	

* Deposit and reserve statistics from *Annual Report of Federal Reserve Board*, 1929, pp. 106-07. Money in circulation, *ibid.*, p. 84. Ratio figures derived from other figures given.

what more rapidly than those of non-member banks, the proportion of member bank deposits to total deposits did not vary materially during this seven-year period — member bank deposits remaining at about three fifths of total deposits. By 1923 the Federal Reserve System seemed to

have reached the limit of its power to absorb the banking resources of the country in the absence of a change in the law making membership compulsory for state chartered banks. The statistics on the growth of loans and investments of member and non-member banks on page 617 support this conclusion.

Member bank deposits subject to reserve requirements increased by the amount of \$7,858,000,000 during the six years, or 32.1 per cent. This represents an increase of more than \$56 for every dollar of increase in federal reserve bank credit outstanding during the same period, and of more than \$17 for every dollar of increase in member bank reserve balances. The increase in member bank deposits subject to reserve requirements is so much greater relatively than the expansion in their reserve balances and in reserve bank credit outstanding that it calls for a few words of explanation. It will be recalled that we have already shown how the member banks were enabled to build up an increase in reserve balances of \$447,000,000 during the period when reserve bank credit expanded by only \$139,000,000. It remains, then, to explain how member banks were enabled to expand their deposits at the rate of more than \$17 for every dollar in expansion of their reserve balances, a rate much higher than the calculated potential rate discussed in Chapter XXII. Primarily this was made possible by the large and growing proportion of their deposits which the member banks listed during this period under the head of time deposits requiring a cash reserve of only 3 per cent. It may be observed in Table XXIII that, whereas in June, 1920, time deposits constituted but 26.5 per cent of total deposits, in June, 1923, they represented 34.3 per cent of the total, and in June, 1929, 41.3 per cent.

With such a large proportion of all deposits subject to the low reserve requirement of 3 per cent, the average reserve requirements against all deposits dropped to approximately 7.3 per cent, whether calculated on the end of June figures given in the table, or on the average of the daily figures for June, 1929. Excess reserves of the member banks on the basis of the average of the daily figures for June, 1929, were \$41,729,000, or approximately 0.13 per cent of their deposits subject to reserve requirements. They had, therefore, expanded credit to the point where their actual cash reserve ratio was practically down to the dangerously low minimum that the law allowed.

12. THE DECLINE IN MONEY IN CIRCULATION

While the progressive reduction in the minimum cash reserve ratio of the member banks through the substitution of time deposits for de-

mand deposits affords an explanation of the abnormal expansion of their deposits relative to the increase in their cash reserves, it throws no light on another startling development in the banking history of 1923-1929. During this period, when member bank deposits increased \$8,413,000,000, and total bank deposits increased \$13,164,000,000, and member banks demand deposits alone increased \$2,911,000,000, there was an actual decline in the amount of money in circulation of \$92,000,000. The drain of cash into circulation which may reasonably be expected during a period of bank deposit expansion was lacking, and as a consequence the ratio of money in circulation to bank deposits declined from what was already a low figure, 11.7 per cent to 8.7 per cent. These percentages include not only the money in actual circulation outside of banks, but also the till money of member banks and the cash reserves of non-member banks, so that the amount of money actually in circulation in June, 1929, was substantially less than 8.7 per cent of total bank deposits.

Had there been during this period of bank credit expansion a drain of cash into circulation of only 10 per cent of the expansion of member bank demand deposits, with no drain at all resulting from the expansion of other bank deposits, and no increase in the till money of member banks and cash reserves of non-member banks, an increase of cash in circulation of \$291,000,000 might have been expected instead of a huge decline, while a drain amounting to 10 per cent of the increase in all bank deposits would have meant an increase of \$1,316,400,000 in the amount of money in circulation.

What is the explanation of the decrease when a large increase might have been expected? Two factors would seem to account for this peculiar development. First, there was simply the continuation of the increase in popularity of payment by check over payment by cash which has long been observed in the United States. But in addition to this was the fact that a very large proportion of the increase in bank deposits grew out of speculative operations rather than out of expansion in the physical volume of trade and production. Stock market transactions and speculative operations in real estate are settled practically 100 per cent by check, and bank deposit expansion growing out of or resulting in such speculative transactions involves little increase in demand for cash. Then, there is to be considered the fact that part of the bank deposit expansion represented an expansion of true savings deposits, which, not becoming part of bank deposit currency, called for no corresponding increase in cash in circulation.

However this may be, it remains true that the amount of money in

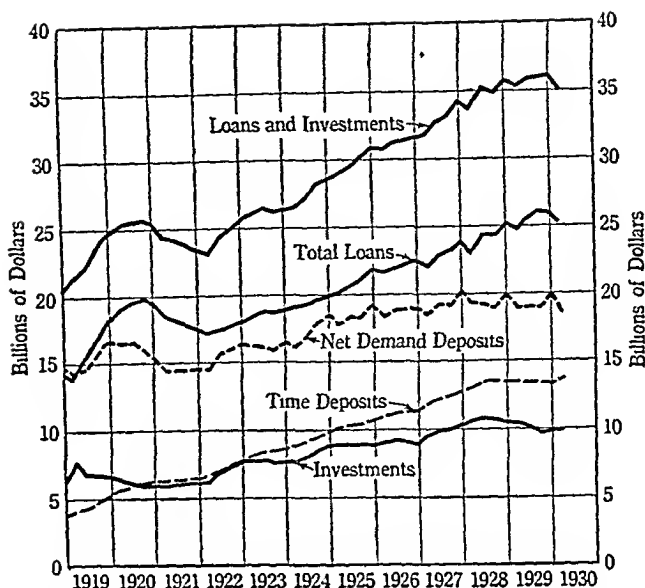


CHART IV. LOANS, INVESTMENTS AND DEPOSITS OF ALL MEMBER BANKS

Figures are for dates on which member banks made call reports
From the *Federal Reserve Bulletin*, June, 1930, p. 341.

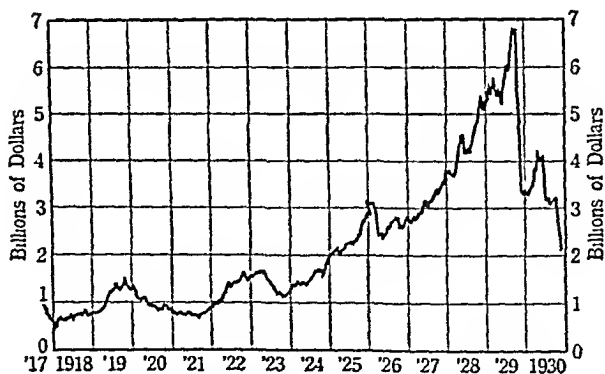


CHART V. BROKERS' LOANS

Based on weekly figures reported to the Federal Reserve Board; figures beginning with 1920 are somewhat more inclusive than earlier figures
From the *Federal Reserve Bulletin*, December, 1930, p. 764.

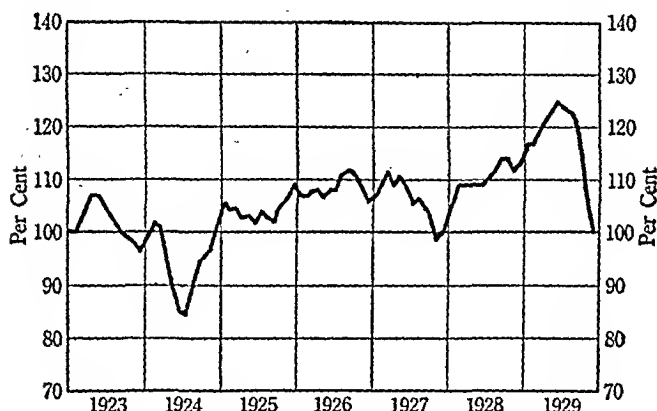


CHART VI. INDUSTRIAL PRODUCTION
(1923-1925 = 100)

From the Federal Reserve Bulletin, February, 1930, p. 52.

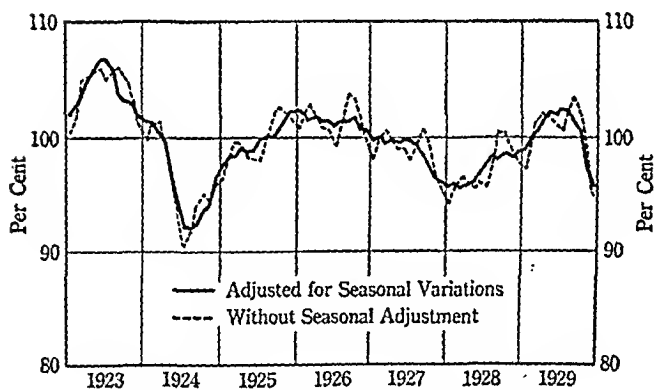


CHART VII. FACTORY EMPLOYMENT
(1923-1925 = 100)

From the Federal Reserve Bulletin, February, 1930, p. 53.

circulation as well as the total monetary gold stocks was declining relative to the total amount of bank deposits, and this made the banking position in the United States as a whole much weaker than the apparently strong and conservative position of the reserve banks indicated, and more vulnerable to financial shocks than most persons thought conceivable during the happy days before the crash.

It is not without interest to speculate on the position of the reserve banks if the amount of money in circulation (outside the Treasury and

the reserve banks) had increased 32.4 per cent from June, 1923, to June, 1929, in proportion to the increase in bank deposits. This would have involved an increase of \$1,548,000,000, as compared with the decline of \$92,000,000 that actually occurred. If this whole amount of \$1,548,000,000 plus \$92,000,000 had been supplied by the reserve banks in the form of federal reserve notes, it would have meant an increase in the amount of reserve notes outstanding on June 30, 1929, of \$1,640,000,000 above the amount actually outstanding on that date, or a total of \$3,307,000,000. Adding this figure to the total deposits, the grand total of deposit and reserve note liability becomes \$5,681,000,000, and the cash reserve ratio falls from the actual figure of 74.5 per cent to the relatively low figure of 53 per cent — a figure so low that it would have given unmistakable warning of a dangerous overexpansion of credit.

It may be observed at this point that the downward trend of the reserve ratio of the member banks and of the ratio of money in circulation to total bank deposits was clearly discernible long before the culminating phase of the speculative orgy, and might well have been regarded as danger signals by the members of the Federal Reserve Board and the executives of the federal reserve banks, as well as by the dominating personalities guiding the operations of the member banks of the system. In our next section we shall have occasion to note more danger signals, all of which were disregarded by those in authority.¹

13. BANK LOANS AND INVESTMENTS: 1923-1929

Total loans and investments of all banks in the United States increased \$14,737,000,000, or 33.7 per cent, during the period from June, 1923, to June, 1929, an increase of about 6.5 per cent a year, uncompounded, or more than twice the rate of increase in the index of industrial production during the period, and six times the rate of increase in the index of freight car loadings. The rate of increase in loans and investments was, as might be expected, about the same as the rate of increase in bank deposits. The rapid rate of increase and the huge total amount of the increase in loans and investments in themselves indicated an unwholesome development. The nature of the loans and investments being made indicated this even more strongly. Member banks' investments in United States government securities increased only \$320,000,000, or 8.3 per cent, during this period, while their investments in other securities increased \$1,976,000,000, or 50.4 per cent.

¹ It is not implied here that none of the officials mentioned observed the danger signals. Some did.

BANK LOANS AND INVESTMENTS: 1923-1929 617

The investments of the member banks, in short, were becoming more risky and less liquid, at an alarming rate.

TABLE XXIV. BANK LOANS AND INVESTMENTS IN THE UNITED STATES: 1923-1929 *

(Figures for year ending June 30 or nearest available date in millions of dollars)

Item	1920	1923	1924	1925	1926	1927	1928	1929	Increase, 1923-1929	
									Amt.	Per cent
Loans:										
Member banks.....	19533	18750	19204	20655	22060	22938	24303	25658	6908	36.8
Non-member banks.....	11305	11647	12337	13227	14114	14440	15180	15873	4226	36.3
All banks.....	30839	30398	31451	33882	36170	37378	39483	41531	11133	36.6
Investments:										
Member banks.....	6026	7757	7963	8803	9123	9818	10758	10052	2295	29.6
Non-member banks.....	4820	5584	5674	6085	6265	6555	7024	6891	1307	23.4
All banks.....	10846	13341	13639	14948	15388	16373	17782	16943	3602	27.0
Loans and investments:										
Member banks.....	25559	26507	27107	29518	31184	32756	35061	35711	9204	34.7
Non-member banks.....	16125	17232	18013	19312	20378	20991	22201	22763	5531	32.1
All banks.....	41684	43737	45180	48830	51562	53750	57265	58474	14737	33.7
Member bank investments in:										
U.S. Government securities.....	2811	3835	3575	3780	3745	3796	4225	4155	320	8.3
Other securities.....	3213	3922	4387	5082	5378	6022	6534	5898	1976	50.4
Reporting member banks in leading cities:										
Loans on securities.....	4249	4157	4310	5289	5693	6220	6962	7332	3175	76.4
All other loans.....	9177	7748	7939	8085	8541	8628	8909	9149	1401	18.1

* Annual Report of Federal Reserve Board, 1931.

The figures on loans of member banks were even more disturbing. Loans on securities of reporting member banks in leading cities grew from \$4,157,000,000, in June, 1923, already a high figure, to \$7,332,000,000 in June, 1929, an increase of 76.4 per cent, as against an increase in all other loans from \$7,748,000,000 to \$9,149,000,000, or \$1,401,000,000, or 18.1 per cent. Here also was indicated a movement from short-term commercial paper loans — the most proper use of commercial bank funds — into loans to be used for speculative purposes. In connection with these loan statistics may be noted the figures on brokers' loans given in Table XX. Net borrowings on collateral in New York City, as reported by members of the New York Stock Exchange, expanded from \$3,219,000,000, on September 30, 1926, to \$8,549,000,000 on September 30, 1929. At the same time member banks and non-member banks alike had made heavy loans secured by real estate mortgages. In short, the commercial banks of the country during the 1923-1929 period were engaged in progressively undermining sound financial conditions by a tremendous expansion of loans and investments, both the

loans and the investments becoming less and less liquid in character as the speculative movement permitted by the expansion of bank credit increased in intensity.

While the general unsoundness of the conditions developed during this period of expansion is now generally admitted, there was a tendency in many quarters, up to the crash of October, 1929, to contend that banking and business conditions were fundamentally sound, and there is a tendency in some quarters to contend now that our banking and business conditions were then sound and would have remained so except for certain unforeseeable developments in the world at large, involving a decline in world trade, widespread suspension of the gold standard, and an unparalleled world-wide deflation in commodity prices. It is the opinion of the writer that our condition of unbalanced prosperity was so precarious that it was clearly unwise for the banking system to make extensive loan and investment commitments based upon it, and that when the banks nevertheless proceeded to expand credit to the point reached by 1928 and 1929, collapse was inevitable sooner or later, regardless of economic and financial conditions in the world at large. Far from our own financial difficulties having resulted from developments in other countries, our foreign trade and banking policies were important contributing factors in precipitating the crises abroad, particularly when the lure of our speculative markets diverted investment funds to this country which might with advantage have remained in Europe. The statistics and other facts presented in this chapter support this point of view, and enough of them were available to serve as a guide for action by responsible authorities early enough to have prevented in large measure the complete financial and business collapse that later occurred.

14. THE LOANS FOR THE ACCOUNT OF OTHERS

The commercial bankers, seeking to free themselves from blame, have pointed to the extenuating circumstance that a large part of the loans to brokers were made by the banks for the account of others, the others having been mainly wealthy corporations with an excess of liquid funds representing undivided profits or money received from the sale of stocks and bonds and not yet permanently invested in plant and equipment. The bankers point out also that, because business corporations were so well supplied with liquid assets that they were in the loan market on the lending side instead of on the borrowing side, the banks were cut off in large part from the normal outlet for their funds — placement in short-term commercial loans. While this argument seems to have some

SUMMARY

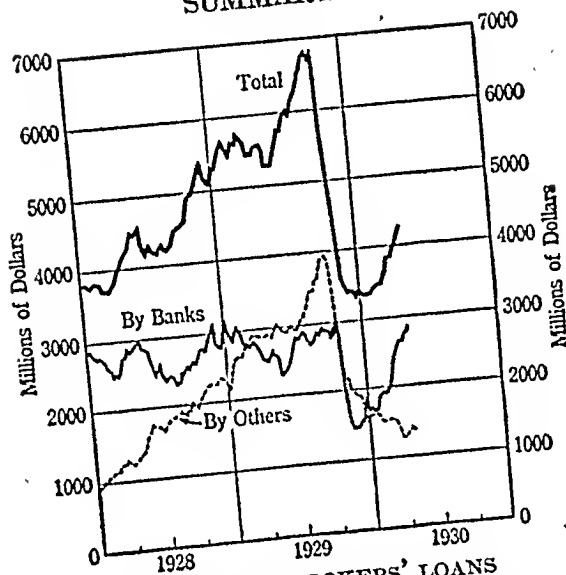


CHART VIII. BROKERS' LOANS

Loans by reporting member banks in New York City (1) for own account and account of out-of-town banks and (2) for account of others.

From the *Federal Reserve Bulletin*, May, 1930, p. 276.

force, it is largely, if not completely, vitiated by the following considerations:

One of the chief reasons why the corporations were so plentifully supplied with cash was their ability to float their own securities, and they could not have sold their own securities so freely to the rank and file of investors and speculators if the latter had not been able to borrow freely from the commercial banks, offering the stocks and bonds purchased as collateral for the loans. The banks also supplied the corporations with funds even more directly — by the direct purchase for their own account of the corporation stocks and bonds. Here the security affiliates played an important part, and on this more will be said in Chapter XXVIII. Moreover, the argument that the banks had lost part of their customary demand for short-term commercial loans hardly serves to support the contention that thereby the banks were compelled to expand their total loans and investments by the amount of more than thirteen billions of dollars in six years, an amount billions of dollars in excess of the amount of commercial loans they had lost.

15. SUMMARY

To sum up: During the 1923-1929 period member banks and non-member banks united in financing speculation in securities and real

estate on an unparalleled scale. Comparatively little of the huge expansion in bank credit was utilized in financing an expansion in the physical volume of industry and trade. The process involved the tying-up of a larger and larger proportion of bank funds in assets of a non-liquid character. The investments of the banks and the collateral they accepted for loans consisted of securities and real estate, capitalizing at an unreasonable rate the high earnings of business concerns enjoying a temporary and unstable prosperity at the expense of other elements of the population and business world. It was only a matter of time until the artificial prosperity would collapse, the bubble of speculation would be pricked, and the banks would be hard put to it to realize in full on their assets. Forced liquidation on an unheard-of scale could easily have been predicted by any well-trained banker or economist familiar with the facts and capable of reasoning without bias. Such predictions, in fact, were not lacking, but they were unpopular, and unheeded. In no responsible quarter was effective action taken while the time for action was ripe — not by the big bankers, the officials of the reserve banks, nor by the Federal Reserve Board. In default of such action the country drifted into financial disaster. In following chapters will be described briefly the nature and extent of this disaster and the new legislation on money and banking designed to remedy a very critical condition.

CHAPTER XXV

DEFLATION AND DEPRESSION: 1929-1933

1. THE DECLINE IN PRODUCTION

HISTORY has amply demonstrated that deflation follows inflation as faithfully as the tides follow the moon, and the period of inflation of 1923 to 1929 proved not to be that exception to the rule relied upon by the economists, bankers, and business men committed to the doctrine of a new era of endless inflation and prosperity. When the inevitable period of deflation and depression came, it turned out to be, in sheer extent of the financial losses, economic disorganization, and panicky fear of complete political and social collapse involved, the most disastrous in the history of the country, and it is likely to leave its imprint upon our government and business organization for generations.

In view of the fact that the prosperity — such as it was — on which the speculating bankers, brokers, and business men, and the general public had built their towering structure of paper profits, reached its crest by the middle of 1929, and that the bottom of the depression had been plumbed by the middle of 1932, the statistics of deflation and depression here to be considered will cover the period from June, 1929, to June, 1932, with some 1933 figures added to show the degree of recovery at that date. The uniformity of dates chosen for the various statistical tables will have the advantage of facilitating comparisons and bringing out clearly relations between the various figures quoted, although involving the disadvantage of not showing in all cases the extreme top and bottom figures of the period of inflation and deflation.

In Table XXV, on page 623, are shown statistics indicating the decline in industrial production from June, 1929, to June, 1932, as measured by the indexes of industrial production of the Standard Statistics Company. These indexes are adjusted for seasonal variation and expressed as relatives, with January 1, 1926, equaling 100. Standard's composite index of industrial production shows a decline from 132.7 in June, 1929, to 57.7 in June, 1932, a decline in the four years of 56.5 per cent. That is to say, the physical volume of production of the manufacturing and mining industries of the United States, as measured by a composite index based upon the individual indexes of sixty industries, carefully weighted according to their relative importance, was reduced by more than half in a period of four years, decline following

decline with disheartening persistence long after it had seemed to many that rock bottom must at last have been reached.

Since not all industries declined at the same rate, there were some whose decline exceeded that registered by the composite index. The index of steel ingot production, representing the decline in activity in the "prince or pauper" iron and steel industry, declined from 151.8 in June, 1929, to 27.3 in June, 1932, a decline of 82 per cent. The index of copper production shows a decline during this period of 75.8 per cent; the index of lumber production, a decline of 70.9 per cent; the index of automobile production, a decline of 64.9 per cent. The index of bituminous coal production shows a milder decline of 56.1 per cent, and the index of cotton textile production, as represented by cotton consumption, a decline of only 40.5 per cent.

The decline of activity in the building industry was even greater than in industrial production, the decline here, as measured by the absolute index of construction of the *Engineering News Record*, having been 62.2 per cent in the four-year period. On the other hand, the decline in agricultural production was relatively small, the variation in production during the four years, 1929-1932, having been the result more of variations in climatic conditions than of scope of activity of the farmers. In 1932, as compared with 1929, the output of corn increased 13.5 per cent; the output of wheat decreased 10.7 per cent; the output of oats increased 10.3 per cent; the output of cotton decreased 12.2 per cent; and the output of hay decreased 6.5 per cent. Had there been no greater decline in industrial production than in agricultural production, the depression, as measured by production and employment statistics, would have been very mild indeed — comparable to the mild setbacks of 1924 and 1927, rather than the grinding years of the seventies and early nineties.

In this connection the car-loading figures are of interest. The yearly average of weekly loadings fell from 1,014,000 cars in 1929 to 543,000 in 1932, a decline of 46.4 per cent. But the loadings of grain and grain products declined by only 30.7 per cent during the same period, and they would have declined even less if the ruinously low prices of grain relative to freight rates had not prevented the shipment to market of many thousands of cars of grain which otherwise would have become revenue-producing freight for the railroads. Had industrial production held up as well as agricultural production, there would have been no severe depression in transportation. The rather sharp decline in grain production in 1933 was the result of a poor season rather than of deliberate restriction of output.

TABLE XXV. DEFLATION STATISTICS: 1929-1933 *

Item	1929	1930	1931	1932	1933	Increase or decrease in per cent, 1929-1932
Month of June indexes of industrial production by the Standard Statistics Company, adjusted for seasonal variation. Relatives, Jan. 1, 1923, = 100						
Composite index of industrial production	132.7	107.2	88.1	57.7	91.0	- 56.5
Steel ingot production...	151.8	106.4	63.7	27.3	77.6	- 82.0
Copper production ...	131.4	76.8	70.9	31.8	28.7	- 75.8
Bituminous coal production.....	98.0	86.1	70.9	43.0	61.4	- 56.1
Automobile production — passenger cars.....	191.6	109.8	88.3	67.3	88.9	- 64.9
Lumber production	100.2	72.4	52.3	29.3	42.8	- 70.9
Cotton consumption	108.1	76.7	91.2	64.3	139.6	- 40.5
Annual crop production U.S. Department of Agriculture						
Corn (millions of bushels)	2535	2060	2567	2876	2291	+ 13.5
Wheat (millions of bushels).....	813	857	900	726	515	- 10.7
Oats (millions of bushels)	1118	1276	1118	1233	699	+ 10.3
Cotton (millions of bales)	14.8	13.9	17.1	13.0	13.1	- 12.2
Hay (millions of tons)...	87.3	74.3	73.4	82.0	76.4	- 6.5
June index of construction volume, by the <i>Engineering News Record</i> . Absolute index, corrected for cost fluctuations. First of the month relatives, 1913 = 100 ...	347	324	243	131	109	- 62.2
Yearly average of weekly freight car loadings by American Railway Association: unit, 1000 cars						
Total.....	1014	879	716	543	..	- 46.4
Grain and grain products	46.0	43.4	38.9	31.9	..	- 30.7

* All statistics in this table from *Statistical Bulletins* of Standard Statistics Company, with original sources indicated in the table.

2. DEFLATION IN PRICES AND PAYROLLS

Table XXVI, on page 625, shows the extent of the deflation from June, 1929, to June, 1932, as measured by indexes of prices, payrolls, and cost of living. The table shows some interesting contrasts between the decline in the prices of agricultural products and farm prices and the decline in prices of non-agricultural products. These contrasting price changes are closely related to the sharp contrast shown between the decline in industrial production and the change in agricultural production during the period of depression, and this relation deserves careful attention. It will be observed that the indexes shown in Table XXVI are not all based on the same year, and the index numbers themselves are not comparable for this reason. But the declines in the various indexes from 1929 to 1932 are made comparable by expressing the decline of each on a percentage basis, with the index for June, 1929, considered as 100 per cent.

On this basis the all commodity price index of the United States Bureau of Labor Statistics shows a decline from June, 1929, to June, 1932, of 33.7 per cent; the non-agricultural products price index, a decline of 28.3 per cent; and the farm products price index, a decline of 55.8 per cent. The decline in the farm products price index was almost twice as great as the decline in the non-agricultural products price index. But the farm prices index of the United States Department of Agriculture, showing the prices actually received for farm products at the farm, shows more accurately the decline in the price of farm products, as it affected the prosperity and purchasing power of the farmer, than does the wholesale price index of the Bureau of Labor Statistics. The index of prices of all farm commodities, indicating the prices actually received by the farmers, and not the price paid at a distant market, fell 61.5 per cent from June, 1929, to June, 1932; the grain index fell 60.3 per cent; the meat animal index fell 65 per cent; and the cotton and cottonseed index fell 74.7 per cent. By 1932 the grain and livestock-growers' income, assuming that they continued to produce on the same scale, had been cut to about two fifths of their income of four years before, and the cotton-growers' income had been cut to one fourth. Meanwhile, their overhead expense in the form of taxes, interest, insurance, etc., had been cut little if at all, and their current operating costs for implements, materials, and supplies and their cost of living expenses had declined relatively much less than their money income.

This decline in the farmer's income, relatively great when compared with the decline in the things he had to buy, as measured by the

DEFLATION IN PRICES AND PAYROLLS

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TABLE XXVI. DEFLATION STATISTICS: 1929-1933 — continued *

Item	For the month of June				Jan. 1933	Decrease, per cent, 1929-32
	1929	1930	1931	1932		
Wholesale commodity price indexes by U.S. Bureau of Labor Statistics. Relative, 1926 = 100:						
All commodity index.....	96.4	86.8	72.1	63.9	61.0	33.7
Non-agricultural products..	91.6	86.3	73.4	67.8	64.0	28.3
Farm products.....	103.3	88.9	65.4	45.7	42.6	55.8
Raw materials.....	96.6	84.8	61.7	53.2	50.2	44.9
Finished (manufactured) products.....	96.6	88.9	76.0	70.0	66.7	27.5
Indexes of farm prices by U.S. Department of Agriculture. Relatives, August, 1909, to July, 1914 = 100:						
All farm commodities.....	135	123	80	52	51	61.5
Grains.....	111	106	67	44	34	60.3
Meat animals.....	163	141	91	57	51	65.0
Cotton and cottonseed.....	146	115	65	37	45	74.7
Indexes of factory employment and payrolls by the Federal Reserve Board. Relatives, 1923-1925 = 100:						
Factory employment.....	102.0	88.8	75.0	59.1	58.1	42.1
Factory payrolls.....	109.7	90.7	67.6	42.6	39.2	61.2
Cost of living index numbers by National Industrial Conference Board. Relative, 1923 = 100:						
All items, post-war budget weights (33% for food, 20% for housing, 12% for clothing, 5% for fuel and lighting, 30% for sundries)	99.2	96.5	85.9	77.2	73.7	22.2
Indexes of production by the Federal Reserve Board. Relatives, 1923-25 = 100. Adjusted for seasonal variation:						
Industrial production.....	125	98	83	59	65	52.8
Manufactures.....	127	97	82	58	64	54.3
Building contracts awarded (value).....	126	99	63	27	22	78.6

* Standard Statistical Bulletin and Federal Reserve Bulletin.

price index of non-agricultural products, was the more disastrous because in 1929, when this decline began, the prices of farm products had been for several years relatively lower than the prices of non-agricultural products, and consequently lower than his cost of production and cost of living, relative to pre-war conditions.

Quite obviously, the unequal decline in the rate of industrial production and agricultural production was the primary cause of the unequal decline in the prices of industrial and agricultural products. The manufacturing industries, when depression began to settle down on the country, refused to meet the situation by cutting prices to stimulate demand, but, on the contrary, clung to their high prices, and restricted output to the quantity that could be sold at those prices, the prices being maintained in most cases by some sort of monopolistic device — follow-the-leader, gentlemen's agreement, trade association, or what not.

This policy of meeting the declining demand by restriction of output rather than by reduction of prices was mainly responsible for the tremendous growth of unemployment and the disastrous decline in payrolls that marked the period. From June, 1929, to June, 1932, the Federal Reserve Board index of factory employment fell from 102 to 59.1, or 42.1 per cent, and the index of factory payrolls fell even more sharply, 61.2 per cent. At the end of this four-year period, the factory workers, with an income little more than one third of their income in 1929, had seen their cost of living reduced by the relatively small amount of 22.2 per cent, assuming that they lived on the same standard as before. Obviously, they could not live on the same standard. Their command over commodities on the average was reduced approximately 50 per cent.

3. RESTRICTION OF OUTPUT PROLONGED THE DEPRESSION

It is in these price relationships just discussed that one will find the fundamental cause of the prolongation of the depression. It will be recalled that the analysis made in the preceding chapter of the nature of the prosperity of 1923-1929 indicated that it was highly artificial and unbalanced because it had not provided the farm population and the wage-earning class with money income enough to continue purchasing the high-priced factory products at the current rate of production. The prosperity of industry had been prolonged by the artificial props of the installment plan, foreign loans, and stock market profits. When these failed, the demand for industrial products fell. Sharp price cuts at this time might have brought prompt readjustment in conditions of demand and supply and an early end to depression. But restriction of industrial output with artificial maintenance of high prices only made

matters worse. Rapidly declining payrolls, the inevitable concomitant of the policy of restriction, brought a further decline in demand, not only for industrial products, but for farm products, and intensified the decline in the price of farm products, which soon thoroughly demoralized agriculture, and destroyed almost completely the buying powers of the farmers. The ruin of the farmers reacted upon the demand for factory products, leading the restrictionists to resort to still further restriction, and so on month after month in a vicious declining spiral of deflation: in industry, deflation primarily in output and payrolls, and only secondarily in prices; in agriculture, deflation in prices, but not in production.

The restrictionists, it should be added, tended by their policies to reduce the demand for their own products, not only by deflating payrolls and farm prices, but more directly, by mutually cutting down the quantity of materials, supplies, or machines they bought from one another. Statistics of industrial production and prices point strongly to the conclusion that the four years of depression were characterized in industry, not by competitive cutting of prices among the producers in a given industry as a means of stimulating demand and maintaining output, but by *competitive restriction of output* among industries, for the purpose of maintaining prices. In these four years prices of non-agricultural products declined only 28.3 per cent, but the physical volume of industrial production fell 56.5 per cent, almost exactly twice as much. It was this policy of adjusting supply to demand, substituted for the old-fashioned competitive practice of adjusting price to demand, that prolonged and deepened the depression to the point of complete industrial and financial collapse. There were, of course, important contributing causes, including the slaughter of prices on the stock and bond markets, the deflation of bank credit, the demoralization in foreign trade, and the financial crises in foreign countries; and these causes deserve consideration.

4. DEFLATION OF SECURITIES

Table XXVII, on page 628, shows the astounding decline in the prices of stocks and bonds from the peak of the 1929 inflation to the bottom of the bear market in 1932. The weekly stock price index of the Standard Statistics Company, representing the prices of 421 important industrial, rail, and public utility stocks, declined from a high of 228.1 in 1929 to a low of 32.5 in 1932, a decline of 85.7 per cent. Obviously, this long and tremendous decline in stock prices — the averages dropping lower and lower, year after year, although rallying sharply from time to time — was ruinous to marginal traders on the long side

of the market. Only those speculators and investors who owned their stocks practically outright in 1929 were able to hold on to their stocks to the bottom of the depression, and thus remain in a position possibly

TABLE XXVII. DEFLATION STATISTICS: 1929-1933 — *continued* *

	1929	1930	1931	1932	Jan 1933	Decrease, 1929 high to 1932 low (per cent)
Weekly stock price index † by Standard Statistics Company (421 stocks). Relative, 1926 = 100.						
Low	140 3	105 5	54 7	32 5	47.8	85.7
High	228 1	184 2	122 5	61 1	50 3	
Total market value of New York Stock Exchange listed securities (based on first of month prices), by New York Stock Exchange. Unit, \$1,000,000,000:						
Stocks and bonds					Value in January	
Low	110 6	101 3	70 62	52 99		61.2
High	136 4	123 5	104 9	67.85		
Stocks						
Low	63 59	53 31	31 11	15 63		82 6
High	89 67	76 08	57 05	27 78		
Bonds						
Low	46 36	47 17	39 51	36 86		22 2
High	47.39	49 29	49 18	40 13		

* *Standard Statistical Bulletin*, published by Standard Statistics Company

† The index of 421 stocks is weighted by the number of shares of each stock outstanding for the value of rights, stock dividends, changes in par value, and consolidations. Included are 351 industrials, 33 rails, and 37 utilities.

to recoup their losses in the next (it seems inevitable) period of inflation. And the outright investor, who bought and paid for his stocks at the top of the market in 1929 had not much joy in the fact that his stocks still reposed in his safe-deposit box at the bottom of the depression, worth then fifteen cents on the dollar.

The total market value of all stocks listed on the New York Stock Exchange, based on the first of the month prices, showed a decline from the 1929 high to the 1932 low almost the same as the decline in the Standard index of prices — the decline in the total market value having been 82.6 per cent. Even the investor who shunned stocks and placed his money in bonds, including a fair proportion of United States government bonds, suffered a loss of 22.2 per cent during these four years, unless his selections showed a smaller decline than the average. This decline of 22.2 per cent in the total market value of bonds listed on the

New York Stock Exchange, when compared with the decline of 82.6 per cent in the market value of listed stocks, offers a comment, sufficient in itself, on the theory offered by the new era economists, that a well-diversified list of common stocks represents an investment as safe as a similar list of bonds. Obviously, the theory does not hold true when the stocks are bought at a time of wild speculation and held to the bottom of a deep depression.

The great decline in the value of stocks and bonds was closely inter-related as cause and effect with the deflation of bank credit during this period of deflation, which we will now consider.

5. DEFLATION OF BANK LOANS AND INVESTMENTS

In our analysis of the post-war deflation of 1920-1921, it was pointed out that banks — reserve banks and others — in the United States had been unjustly accused of deflating business and agriculture and the stock market. What actually occurred at that time was that the speculators in securities, real estate, and commodities, having practically exhausted the powers of bank credit expansion, saw their speculative profits melting away as prices began to tumble. Stampeded into a vain attempt to unload their holdings on one another, they subjected a market almost bare of buying orders to a tremendous pressure of selling orders and brought about a sharp collapse of prices in the three fields of speculation — securities, commodities, and real estate. The business men and the speculators deflated one another — the bank credit deflation of that period was a result rather than a cause of industrial and agricultural deflation.

But during the 1929-1932 deflation period, the deflation of bank credit, while itself largely a result of deflation in business and speculation, reacted, for reasons to be explained, upon business and speculation, forcing further deflation in the activities of these. Business men and speculators on the one hand and the banks on the other mutually deflated each other. The reason for this interaction was that the banks had themselves become involved to an unprecedented extent in speculative operations.

It will be convenient to begin our analysis of the bank credit deflation of 1929-1932 with a discussion of bank loans and investments of the period. In Table XXVIII on bank loans and investments, on page 630, end of month figures, are given in order to obtain comparable figures of member and non-member banks. Aside from this consideration, it would have been preferable to use monthly average of daily figures, since the end of month figures are in some measure distorted at times

TABLE XXVIII. DEFLATION STATISTICS: 1929-1933 — *continued* *
BANK LOANS AND INVESTMENTS

	End of month figures (in millions of dollars)						
	June 1929	June 1930	June 1931	June 1932	Sept. 1932	Change, June, 1929- June, 1932	
						Amount	Per cent
Loans:							
Member banks.....	25658	25214	21816	16587	15924	- 9071	- 35.4
Non-member banks.....	15853	15404	13568	11247	11061	- 4606	- 29.1
All banks.....	41512	40618	35384	27834	26985	- 13678	- 33.0
Investments:							
Member banks.....	10052	10442	12106	11414	12121	+ 1362	+ 13.5
Non-member banks.....	16910	7018	7531	6823	6746	- 87	- 1.3
All banks.....	16962	17490	19637	18237	18867	+ 1275	+ 7.5
Loans and Investments:							
Member banks.....	35711	35656	33923	28001	28045	- 7710	- 21.6
Non-member banks.....	22763	22453	21099	18071	17807	- 4692	- 20.6
All banks.....	58474	58108	55021	46071	45852	- 12403	- 21.2
Classification of loans of all member banks:							
Loans to customers other than banks:							
Secured by:							
Stocks and bonds....	7734	8061	7117	5292	5056	- 2442	- 31.6
Real estate.....	3164	3155	3216	2894	2885	- 270	- 8.5
All other loans.....	11618	10349	8922	7081	6527	- 4537	- 39.1
Total.....	22517	21565	19257	15267	14497	- 7250	- 32.2
Loans to brokers in New York.....	2025	2365	1217	278	414	- 1747	- 86.3
Total loans secured by stocks and bonds.....	10094	10656	8563	5916	5770	- 4178	- 41.4
Classification of invest- ments of member banks:							
U.S. government securi- ties.....	4155	4061	5343	5628	6366	+ 1473	+ 35.4
Other securities.....	5898	6380	6763	5786	5755	- 112	- 1.9
Deposits, exclusive of inter- bank deposits:							
Member banks.....	32284	33680	31566	24755	24903	- 7529	- 23.3
Non-member banks.....	21567	21264	20216	17208	17040	- 4359	- 20.2
All banks.....	53852	54954	51782	41963	41942	- 11889	- 22.1

* All statistics in this table from *Federal Reserve Bulletin*, March, 1933.

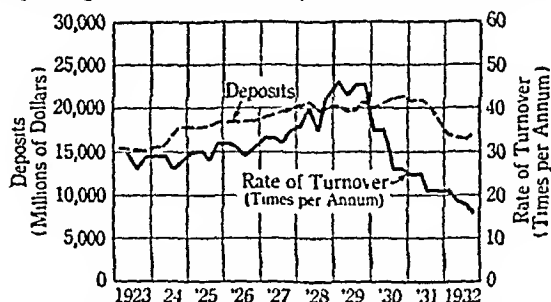
by efforts of the banks at window-dressing in preparation for publication of their statements at call dates. For non-member banks monthly average of daily figures covering loans, investments, and deposits are not available. It may be added that the conclusions drawn from the statistics given in Table XXVIII would not need to be materially altered if the monthly average of daily figures for member banks had been substituted for the statistics given.

To begin with, it may be noted that the decline in the loans and the investments of member and non-member banks fell far short of the decline in the index of industrial production, the index of construction, and the index of factory employment. Loans and investments of member and non-member banks combined declined in the four years from June, 1929, to June, 1932, only 21.2 per cent, while industrial production declined 56.5 per cent, construction declined 62.2 per cent, and factory employment, 42.1 per cent. Deposits of all banks combined likewise declined less sharply than industrial production, construction, and factory employment, the decline in deposits having been only 22.1 per cent, almost the same as the decline in bank loans and investments. In short, the decline in the physical volume of production during these four years was relatively more than twice as great as the decline in bank credit, whether this credit be measured by loans and investments or by deposits. Even the decline in car loadings, which represents roughly the composite decline of physical production as a whole, including agricultural production as well as industrial production, was relatively twice as great, at 46.4 per cent, as the decline in bank credit.

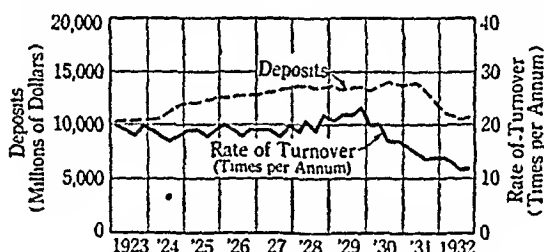
But to make the comparison fair between bank credit measured in dollars and the physical volume of production, the decline in the latter needs to be adjusted to take into consideration the lower level of prices. A rough measurement of the decline in industrial production, as measured in dollars, may be made as follows: Subtracting the decline in industrial production of 56.5 per cent from 100 per cent, we get 43.5 per cent. Subtracting the decline in non-agricultural prices of 28.3 per cent from 100 per cent, we get 71.7 per cent. Multiplying 43.5 per cent by 71.7 per cent, we get 31.2 per cent, a figure which indicates roughly the rate of industrial production, on a dollar basis, in June, 1932, expressed as a percentage of the rate in June, 1929. The decline is 68.8 per cent. Allowing for an element of error in this calculation, it still remains obvious that industrial production, taking the price level into consideration, declined a great deal more rapidly during the depression than the amount of bank credit. It would hardly be safe to say that the banks by contracting credit 21 or 22 per cent had forced

a contraction in industrial production of 68.8 per cent, or a decline in the total value of stocks listed on the New York Stock Exchange of 82.6 per cent.

Not only did bank credit decline less than industrial production during the four-year period as a whole, but the decline in bank credit



REPORTING MEMBER BANKS IN LEADING CITIES



REPORTING MEMBER BANKS OUTSIDE NEW YORK CITY

CHART IX. TURNOVER OF DEPOSITS

Based on estimated figures of debits to individual accounts for reporting member banks on leading cities. Figures of deposits are for net demand plus time deposits of these banks.

From the *Federal Reserve Bulletin*, January, 1933

tended to lag considerably behind the decline in production and commodity prices during the whole four years. This holds true also of the amount of money in circulation outside the reserve banks and the Federal Treasury. Money in circulation not only did not decline as rapidly as prices, but finally, before the bottom of the depression was reached, actually began to increase rapidly, so that by June, 1932, the amount of money in circulation was \$843,000,000 greater than in June, 1929. Obviously, neither the factor of declining bank credits nor of money in circulation forced the deflation of business. The major causes of the decline in business were, first, the maldistribution of buying power arising from the lack of balance between prices of finished manufactured goods on the one hand, and the prices of raw materials

and wages on the other, and secondly, the lack of desire of those with buying power, in the form of cash or bank credit, to use it. The operation of the second cause is clearly indicated by the fact that bank debits declined more rapidly than bank deposits, showing that the velocity of bank deposits was slowing down. There was hoarding of bank deposits

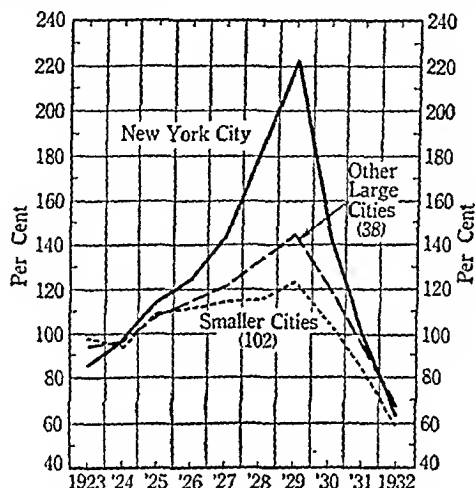


CHART X. DEBITS TO INDIVIDUAL ACCOUNTS

(Annual Basis 1923-1925 = 100)

Based on debits to individual accounts for 141 cities.

From the *Federal Reserve Bulletin*, January, 1933.

during this period as well as hoarding of money, and the former was much more detrimental to business than the latter, although less disturbing to the cash reserve ratios of the banks. In terms of the quantity theory of money, the decline in V and V' was much more severe and disastrous in its consequences than the decline in M and M' .

6. THE BANKS AND DEFLATION OF BUSINESS AND THE STOCK MARKET

None the less, the commercial banks did take an active part in the deflation process. As a consequence of their unwise policy of undue expansion in the total volume of their loans and investments, without which the stock market orgy could not have taken place, and of the even more unwise policy of tying up a larger and larger proportion of their resources in real estate and stock market loans, and in investments in securities other than United States bonds, the banks were in a very poor position to withstand a period of declining prices and busi-

ness activity without putting undue pressure upon their customers and upon the investment market. Having made unduly large loans on corporation stocks, the banks as a group had to call such loans when stock prices fell in order to safeguard themselves from loss through inadequately collateralized loans. Such calling of loans forced additional

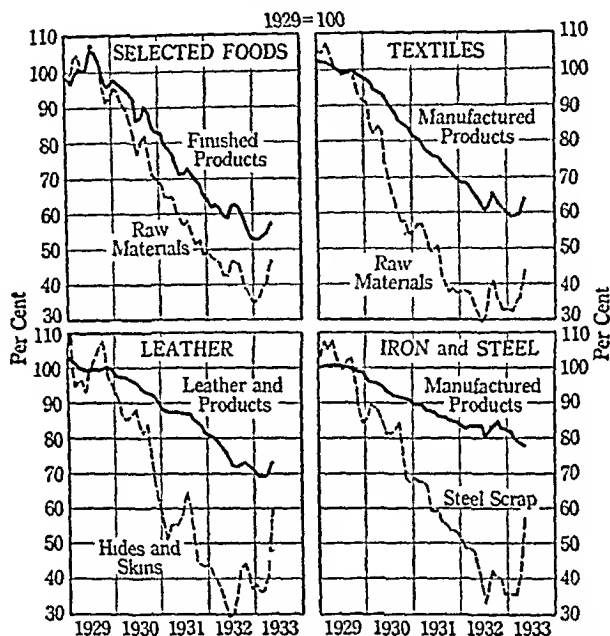


CHART XI. WHOLESALE PRICE MOVEMENTS — FOUR MAJOR GROUPS

(1929 = 100)

Index numbers computed from selected data for details see *Federal Reserve Bulletin* for December, 1932, page 734

From the *Federal Reserve Bulletin*, July, 1933

stock on a weak and declining market, causing additional breaks in the market, requiring additional calling of loans to protect still other accounts, and so on in a vicious circle. A similar situation existed in respect to the investments of the banks in corporation and foreign bonds. When the prices of these bonds—many of them of very uncertain value in the first place, and not proper investments for a bank entrusted with the use of other people's money—began to fall, many banks felt impelled to sell, and their selling precipitated additional declines, causing still more banks to sell, thus causing further breaks in the bond market.

In addition to the calling of loans and liquidation of investments by

the banks to safeguard themselves against losses on bad loans and bad investments, much bank selling was precipitated by the banks in an effort to improve or maintain their cash reserve position. It must be borne in mind that when in a system of banks some banks reduce their loans and liquidate investments, for whatever reason, other banks must

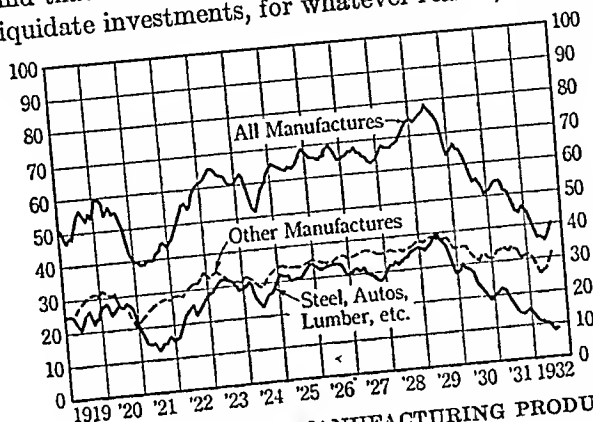


CHART XII. VOLUME OF MANUFACTURING PRODUCTION
(Aggregates in Federal Reserve Board Index Adjusted for Seasonal Variation)

Weighted aggregates in millions "Steel, autos, lumber, etc.," includes also vessels built, locomotives, nonferrous metals, cement, polished plate glass, and coke "Other manufactures" includes textiles, leather products, foods, tobacco products, paper and printing, petroleum refining, and automobile tires and tubes.

From the *Federal Reserve Bulletin*, November, 1932.

likewise reduce loans and liquidate investments or suffer a loss in reserves through the clearing-house, or, in the case of our member banks, through the clearing-house operations of their federal reserve banks. Liquidation of bad loans and investments by some banks thus compelled liquidation to maintain reserves by other banks. The alternative for member banks was additional borrowing at the reserve banks, and for such borrowing many had no eligible collateral. Then entered the additional factor of bank failures. Thousands of banks were in an over-extended and weak condition at the height of the boom in 1929, and soon hundreds of these were failing. Their impending and actual failure forced additional calling of loans and selling of securities, and caused also hoarding of cash and runs on banks still solvent, necessitating still more liquidation by such banks in an effort — often vain enough — to maintain adequate cash reserves. The increasing number of bank failures — 642 in 1929, 1345 in 1930, 2298 in 1931, and 1456 in 1932 — undoubtedly played an important part in increasing the pressure of liquidation both upon the banks remaining solvent and upon their customers.

The effect of this deflation by the banks was felt directly most keenly by the stock and bond market, but indirectly it was a great factor in further depressing business and retarding recovery, because it tended to destroy the buying power and the borrowing power both of producers and consumers. It hurt business both at the buying end and the selling end, and reacted upon commodity prices, depressing them to lower and lower levels. Nevertheless, the banks are to be blamed less for their policy of deflation, which was in large measure forced upon them by pressure of circumstances not within the control of their managements, than for their earlier policy of inflation, which they entered upon and persisted in quite voluntarily, and from which they might have desisted at any time they cared to adopt the fundamental principle of sound banking, namely, that safety should take precedence over profits in a business operating with other people's money.

It is interesting to note in what quarters the banks deflated most drastically. During the four-year period, June, 1929, to June, 1932, member banks deflated loans 35.4 per cent; but they actually increased their investments during this period by 13.5 per cent. The increase in investments was, however, wholly accounted for by increased holdings of government bonds. While holdings of government bonds had increased \$1,473,000,000, holdings of other securities had declined \$112,000,000. If we look at the situation in June, 1931, more than a year and a half after the first break in the market, we find not only a great increase in government bond investments, but also a rise of more than \$800,000,000 in investments in other securities by the member banks. The banks had not yet lost confidence in corporation and foreign government bonds. Between June, 1931, and June, 1932, however, deflation in such investments was precipitous. Up to June, 1931, a heavy reduction in loans by member banks had been offset more than 50 per cent by a heavy increase in investments; after this date they deflated both loans and investments, other than government bonds.

As for loans, loans to brokers were deflated most drastically, the decline in the four years having been 86.3 per cent. Loans to their customers, secured by stocks and bonds, the member banks reduced only 31.6 per cent, real estate loans to their customers only 8.5 per cent, and all other loans, 39.1 per cent. In short, deflation of bank credit affected most severely bank credit which had been extended in connection with operations on the stock and bond market, so that inflation and deflation had occurred mainly in the same quarters.

clined 21.4 per cent, as against a decline of 21.6 per cent in the total of their loans and investments. During this period the member banks, taken as a whole, were strengthening their cash reserve position with the federal reserve banks, their excess cash reserves rising from the low figure of \$41,700,000 in June, 1929, to \$231,000,000 in June, 1932, while their borrowing at the banks declined from \$971,000,000 in June, 1929, to \$494,000,000 in June, 1932. Naturally, not all banks shared equally in this betterment. Unfortunately, more than five thousand banks were unable to withstand the strain of deflation during the three calendar years, 1930-1932, and were forced to suspend, more than one thousand of these being member banks. The banks which failed had presumably exhausted their borrowing powers at the reserve banks, but the member banks in the aggregate had during this period a great deal of unused borrowing power. In June, 1932, for example, at one of the very worst periods of the depression from the point of view of business activity, the country banks alone held government securities and eligible commercial paper to the amount of \$1,965,000,000, as against total borrowings at the reserve bank in the same month of only \$494,000,000 for all member banks. Government securities and eligible paper of all member banks at this date aggregated \$7,407,000,000. There is no evidence here of restriction of bank credit through lack of paper discountable at the reserve banks. Nor is there any evidence in the federal reserve bank statistics that deflation was forced upon the country by federal reserve bank operations.

8. FEDERAL RESERVE BANK CREDIT, 1929-1932

From June, 1929, to June, 1931, federal reserve bank credit declined from \$1,317,000,000 to \$945,000,000, or considerably less than the decline in bills discounted. During the same period bills bought and government securities expanded. The reserve banks in fact were engaged in the process of easing credit by a very substantial increase in their holdings of government bonds during these two years, rather than in deflating credit. Member banks reduced their indebtedness to the reserve banks, not because they were under pressure to do so, but because they preferred to do so, and the reduction was made possible by the liberal purchases of government securities by the reserve banks on the one hand and an increase of more than \$500,000,000 in the monetary gold stocks of the country, while money in circulation increased by less than \$100,000,000.

During the later part of the period of depression, when hoarding of currency caused a sharp increase in the amount of money in circulation

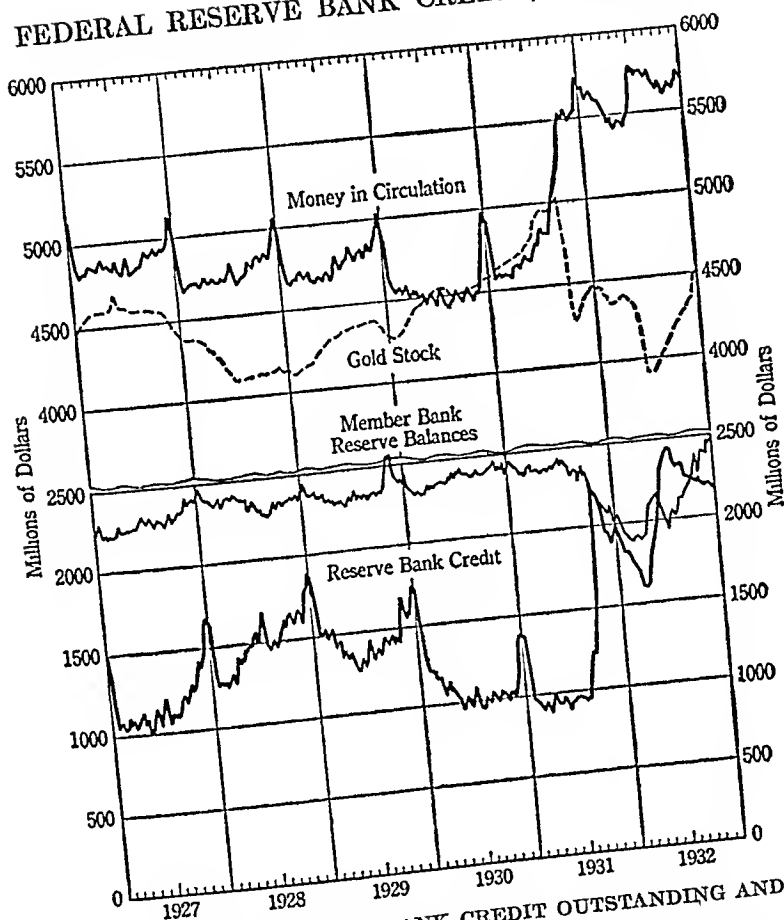


CHART XIII. RESERVE BANK CREDIT OUTSTANDING AND
PRINCIPAL FACTORS IN CHANGES

Based on weekly averages of daily figures, latest figures are for week ending December 31
From the Federal Reserve Bulletin, January, 1933.

at the same time that heavy exports of gold reduced the monetary gold stocks, the reserve banks expanded reserve bank credit sharply, primarily to supply the deficiency in money actually in use resulting from the hoarding of currency and gold exports — this credit being extended mainly through the purchase of government bonds, and payment being made, directly or indirectly, by the medium of federal reserve notes. The result was that federal reserve bank credit, government bonds held, and federal reserve notes in circulation all three increased by an amount in excess of one billion dollars from June, 1931, to June, 1932. The ease with which the reserve banks had met all demands for ex-

TABLE XXX. DEFLATION STATISTICS: 1929-1933 — *continued* *FEDERAL RESERVE BANK CREDIT
(Average of daily figures in millions of dollars)

	June 1929	June 1930	June 1931	June 1932	Jan 1933	Change 1929-32
Reserve bank credit outstanding:						
Bills discounted	978	251	188	495	255	- 483
Bills bought	99	141	121	50	32	- 49
U.S. Government securities .	179	571	610	1697	1806	+ 1518
Other reserve bank credit. . .	61	37	26	20	17	- 41
Total	1317	1000	945	2262	2110	+ 945
Factors of decrease:						
Monetary gold stocks . . .	4311	4528	4865	3956	4547	- 355
Treasury currency	1779	1775	1759	1787	1901	+ 8
Factors of increase:						
Money in circulation . . .	4687	4489	4750	5530	5631	+ 843
Member bank reserve balances	2314	2392	2404	2062	2516	- 252
Non-member bank deposits, etc.	30	27	35	65	60	+ 35
Unexpended capital funds .	376	395	380	348	351	- 28

* Annual Reports of Federal Reserve Board and Federal Reserve Bulletin, March, 1933.

tension of credit during the whole period from October, 1929, when the first crash occurred on the stock market, to the time when the lack of "free gold" threatened to limit further extension of credit in the early months of 1932, indicates that the Federal Reserve System as a whole could easily have borne the shocks of the banking crisis if the member banks themselves had not been so heavily encumbered as they were with non-liquid assets in the form of real estate loans, stock market loans, and investments in questionable bonds, not to mention heavy investments in speculative real estate. When the banks began to fail in increasing numbers, undermining confidence, and generating hoarding of currency on an enormous scale, runs on banks, and a flight from the dollar, the situation got out of hand, and collapse could have been staved off only by a banking system capable of redeeming a very large part of all deposits in gold upon demand—a thing which no banking system in the world could do.

CHAPTER XXVI

SOME DEVELOPMENTS IN MONEY AND BANKING IN EUROPE: 1914-1930¹

1. THE PROCESS OF INFLATION IN ENGLAND

SINCE the banking crisis which came to a head in the United States in March, 1933, was closely connected with, and in part a result of, financial developments in Europe, it becomes necessary at this point to digress from our discussion of money and banking in the United States and to consider briefly some phases of European war and post-war monetary history. This is the more necessary because in our earlier discussion of the banking systems of England, France, and Germany, in Chapter XVIII, these systems were described only as they stood before the outbreak of the World War. As in that earlier chapter, so here, because of limitations of space and time, our discussion will be confined to developments in the three European countries of greatest financial importance — England, France, and Germany.

In England, at the outbreak of the war, the financial community feared a run on the banks by frightened depositors, with the result that the cash reserves of the banks would be speedily exhausted. The Bank Act was, therefore, promptly suspended, for the first time since 1866, and the Bank of England placed in a position to supply all the currency that might be needed to meet a run by issuing a larger amount of notes in excess of its gold reserves than the Bank Act allowed, as described in Chapter XVIII.

On August 6, 1914, more positive action toward inflation was taken by the passage of the Currency and Bank Notes Act, which, in addition to permitting expansion of the bank-note issues of the Bank of England, authorized the issue of government paper money called currency notes in denominations of one pound and ten shillings. Both the bank notes and the currency notes were nominally redeemable in gold, but from the passage of this act to April, 1925, Great Britain was off the gold standard, and the inconvertible bank notes and government currency notes were legal tender.

By persuasion and indirect pressure, and without any special legis-

¹ Much of the factual material in this chapter has been drawn from the *Report on European Currency and Finance* by the Commission of Gold and Silver Inquiry, United States Senate, edited by John Parke Young. Washington, Government Printing Office, 1925.

lative compulsion, the people were induced to exchange gold which had been in circulation for other kinds of money, and those who demanded redemption of paper in gold were stigmatized as unpatriotic. By such means most of the gold in the country, including not only that which had been in circulation among the people, but also that held by the joint-stock banks, was concentrated in the Bank of England, whose gold reserves rose from £34,983,000 at the end of 1913 to £128,268,000 at the end of 1920. Export of gold was not specially prohibited until May, 1917, but during this interval exportation, except for limited amounts, was prevented by indirect methods.

With the gold standard thus in reality abandoned, although nominally still in operation, the way was open for inflation of the currency in the manner characteristic of war finance. The instruments used in this case were advances to the Government by the Bank of England, advances to their customers by the other banks, investments in government securities by the banks, and the issue of the government currency notes. The process of bank credit inflation was described as follows by the *Report* of the Cunliffe Committee of 1918:

Suppose, for example, that in a given week, the Government require £10,000,000 over and above the receipts from taxation and loans from the public. They apply for an advance from the Bank of England, which by a book entry places the amount required to the credit of Public Deposits in the same way as any other banker credits the account of a customer when he grants him temporary accommodation. The amount is then paid out to contractors and other government creditors, and passes, when the checks are cleared, to the credit of their bankers in the books of the Bank of England — in other words, is transferred from Public to "Other" Deposits, the effect of the whole transaction thus being to increase by £10,000,000 the purchasing power in the hands of the public in the form of deposits in the Joint Stock Banks and the bankers' cash at the Bank of England by the same amount. The bankers' liability to depositors having thus increased by £10,000,000, and their cash reserves by an equal amount, their proportion of cash to liabilities (which normally before the war was something under 20 per cent) is improved, with the result that they are in a position to make advances to their customers to an amount equal to four or five times the sum added to their cash reserves, or, in the absence of demand for such accommodation, to increase their investment by the difference between the cash received and the proportion they require to hold against the increase in their deposit liabilities. Since the outbreak of the war, it is the second procedure which has in the main been followed, the surplus cash having been used to subscribe for Treasury Bills and other government securities. The money so subscribed has again been spent by the Government and returned in the manner above described to the bankers' cash balances, the process being repeated again and again until each £10,000,000 originally advanced by the Bank of England had created new deposits representing new purchasing power to several times that amount.

Such an expansion in bank deposits as indicated in the foregoing quotation from the Cunliffe Committee *Report* could not, of course, go on without a corresponding increase in money in circulation, the bank credit inflation having been accompanied, as we shall see in a moment, by a sharp rise in prices, requiring more money for meeting payrolls and the demands of retail trade. This increase in currency was provided by the issue of currency notes, the government paper money already referred to. The currency notes were placed in circulation through the Bank of England, the joint-stock banks receiving currency notes from the Bank of England in exchange for an equal amount of their deposits at the Bank.

The required increase in the amount of money in circulation might have been supplied directly by the Bank of England, since, with the Bank Act suspended, the way was open for an unlimited increase in the amount of the uncovered note issue. Actually the Bank exceeded the limit of the Bank Act for only a trifling amount and for only a few days. On account of the enormous increase in its gold reserve, however, the Bank was able to expand its gold-covered notes outstanding from £34,983,000 at the end of 1913 to £132,851,000 at the end of 1920. This increase in the gold-covered note issue, it should be noted, represented no real expansion in the currency, since it was based upon a withdrawal of an equal amount of gold from circulation. But the issue of currency notes represented just so much expansion in the supply of money. These notes increased rapidly in amount until a maximum of about £370,000,000 was reached in 1920, this presumably being the amount required to support the increase in bank deposits from £1,142,038,000 at the end of 1913 to £2,739,155,000 at the end of 1920.

2. THE RISE IN PRICES IN ENGLAND

The expansion of the currency and bank credit in England during the period from 1914 to 1920 made possible a great rise in prices, and because of the great demand for commodities by the Government and the public, this potential rise in prices became real. Rising prices naturally stimulated business activity and the purchase of goods so that the rise in prices actually outran the increase in the quantity of money and bank deposits — the increase in the velocity of circulation of money and bank deposits characteristic of boom periods giving prices an additional fillip. At the peak of price inflation early in 1920, English prices had risen to above 300 per cent of the pre-war level, or relatively, considerably more than in the United States. As in the United States, there had been a slight dip in prices at the end of the war, fol-

lative compulsion, the people were induced to exchange gold which had been in circulation for other kinds of money, and those who demanded redemption of paper in gold were stigmatized as unpatriotic. By such means most of the gold in the country, including not only that which had been in circulation among the people, but also that held by the joint-stock banks, was concentrated in the Bank of England, whose gold reserves rose from £34,983,000 at the end of 1913 to £128,268,000 at the end of 1920. Export of gold was not specially prohibited until May, 1917, but during this interval exportation, except for limited amounts, was prevented by indirect methods.

With the gold standard thus in reality abandoned, although nominally still in operation, the way was open for inflation of the currency in the manner characteristic of war finance. The instruments used in this case were advances to the Government by the Bank of England, advances to their customers by the other banks, investments in government securities by the banks, and the issue of the government currency notes. The process of bank credit inflation was described as follows by the *Report of the Cunliffe Committee of 1918*:

Suppose, for example, that in a given week, the Government require £10,000,000 over and above the receipts from taxation and loans from the public. They apply for an advance from the Bank of England, which by a book entry places the amount required to the credit of Public Deposits in the same way as any other banker credits the account of a customer when he grants him temporary accommodation. The amount is then paid out to contractors and other government creditors, and passes, when the checks are cleared, to the credit of their bankers in the books of the Bank of England — in other words, is transferred from Public to "Other" Deposits, the effect of the whole transaction thus being to increase by £10,000,000 the purchasing power in the hands of the public in the form of deposits in the Joint Stock Banks and the bankers' cash at the Bank of England by the same amount. The bankers' liability to depositors having thus increased by £10,000,000, and their cash reserves by an equal amount, their proportion of cash to liabilities (which normally before the war was something under 20 per cent) is improved, with the result that they are in a position to make advances to their customers to an amount equal to four or five times the sum added to their cash reserves, or, in the absence of demand for such accommodation, to increase their investment by the difference between the cash received and the proportion they require to hold against the increase in their deposit liabilities. Since the outbreak of the war, it is the second procedure which has in the main been followed, the surplus cash having been used to subscribe for Treasury Bills and other government securities. The money so subscribed has again been spent by the Government and returned in the manner above described to the bankers' cash balances, the process being repeated again and again until each £10,000,000 originally advanced by the Bank of England had created new deposits representing new purchasing power to several times that amount.

Such an expansion in bank deposits as indicated in the foregoing quotation from the Cunliffe Committee *Report* could not, of course, go on without a corresponding increase in money in circulation, the bank credit inflation having been accompanied, as we shall see in a moment, by a sharp rise in prices, requiring more money for meeting payrolls and the demands of retail trade. This increase in currency was provided by the issue of currency notes, the government paper money already referred to. The currency notes were placed in circulation through the Bank of England, the joint-stock banks receiving currency notes from the Bank of England in exchange for an equal amount of their deposits at the Bank.

The required increase in the amount of money in circulation might have been supplied directly by the Bank of England, since, with the Bank Act suspended, the way was open for an unlimited increase in the amount of the uncovered note issue. Actually the Bank exceeded the limit of the Bank Act for only a trifling amount and for only a few days. On account of the enormous increase in its gold reserve, however, the Bank was able to expand its gold-covered notes outstanding from £34,983,000 at the end of 1913 to £132,851,000 at the end of 1920. This increase in the gold-covered note issue, it should be noted, represented no real expansion in the currency, since it was based upon a withdrawal of an equal amount of gold from circulation. But the issue of currency notes represented just so much expansion in the supply of money. These notes increased rapidly in amount until a maximum of about £370,000,000 was reached in 1920, this presumably being the amount required to support the increase in bank deposits from £1,142,038,000 at the end of 1913 to £2,739,155,000 at the end of 1920.

2. THE RISE IN PRICES IN ENGLAND

The expansion of the currency and bank credit in England during the period from 1914 to 1920 made possible a great rise in prices, and because of the great demand for commodities by the Government and the public, this potential rise in prices became real. Rising prices naturally stimulated business activity and the purchase of goods so that the rise in prices actually outran the increase in the quantity of money and bank deposits — the increase in the velocity of circulation of money and bank deposits characteristic of boom periods giving prices an additional fillip. At the peak of price inflation early in 1920, English prices had risen to above 300 per cent of the pre-war level, or relatively, considerably more than in the United States. As in the United States, there had been a slight dip in prices at the end of the war, fol-

lowed by another sharp rise lasting until near the middle of 1920, when a sharp decline set in lasting to near the end of 1921.

From 1915 to 1922 prices in Great Britain were relatively higher than in the United States. From 1919 on the difference was approximately the same as the premium on the gold dollar in terms of the depreciated pound sterling, so that when reduced to a gold basis the prices in the two countries were about on a par relative to the respective pre-war prices. On a gold basis prices in both countries fluctuated closely around 150 per cent of the pre-war level, from 1922 to 1925, when the gold standard was restored — temporarily, as it turned out — in Great Britain.

3. PEGGING THE POUND

At the outbreak of the war, sterling exchange in New York rose substantially above par, the rise resulting primarily from the desire of the British banks and financial houses to transfer funds in foreign countries to London to meet immediate and pressing needs. Temporarily the demand for sterling exchange in New York exceeded the supply, and the rate rose, not only above par, but above the gold export point. In a short time, however, the rate declined, as a result of a growing excess of English imports over exports, and before the end of 1914 the rate in New York on London had fallen below par. Owing to the restrictions on exports of gold from England, the decline in the pound was not checked at the (New York) gold import point, but continued until, in September, 1915, it reached \$4.50.

To prevent a further decline in sterling exchange the British Government resorted to stabilization operations, and from early 1916 to March, 1919, the pound was pegged at \$4.76. The process of pegging the pound at \$4.76 involved obtaining dollar loans in New York in amounts sufficient to offset the excess of the payments due to the Americans by the British over the payments due to the British by Americans, including payments both public and private for goods and services, and making allowance for roundabout payments through a third country in the so-called triangular trade operations. Practically speaking, these loans paid for the munitions and other materials purchased in the United States by the British to be used in prosecuting the war, since it was the purchase of war materials in enormous quantities that was the primary factor in developing the "unfavorable" balance of trade. Leaving out of consideration various complicating factors which need not here concern us, the following formula indicates the amount of loans required to stabilize or peg the pound:

$$\text{British Exports plus American Loans} = \text{British Imports}$$

Before the United States entered the war, the British loans in New York were made through the banking house of J. P. Morgan and Company. After we entered the war, the loans were advanced directly by the United States Government to the British Government, the total amount of such loans made during the period from April, 1917, to May, 1919, exceeding \$4,000,000,000.

Obviously, if these loans had not been made, and if the British had nevertheless attempted to purchase supplies in the United States on the same lavish scale, the supply of sterling exchange in New York would have so far exceeded demand that the rate would have dropped precipitously. The fall could not have been checked by the export of gold from London, because, aside from the restrictions on such export, there was not enough gold in England to strike a balance. Such a drop in the pound sterling would have greatly increased the cost of American goods in pounds sterling, assuming that prices in dollars had remained the same in New York, and would have correspondingly increased the difficulties of the British in financing the war. Obviously prices, in England, of goods imported from the United States would have tended to rise in proportion to the fall in the rate of exchange, and this rise in the cost of imported goods would have tended to spread to other goods in England, and to money wages. At the same time the higher costs to the Government of the materials purchased at home and abroad would have necessitated larger domestic loans and larger issues of currency notes — that is to say, more inflation. Without the war loans in the United States, the British Government actually could not have bought supplies on the enormous scale on which such supplies were bought; any attempt to have done so would have resulted merely in a complete collapse of the pound sterling, and limitless inflation.

When, early in 1919, the stabilization operations were discontinued, sterling exchange fell rapidly, reaching a low of about \$3.20 in February, 1920. From the date when the pegs were removed from the pound until the gold standard was restored in Great Britain in 1925, the rate of sterling exchange fluctuated in accordance with the relative demand and supply, approximately at a level indicated by the purchasing power parity theory discussed in our chapter on Foreign Exchange.

4. TEMPORARY RESTORATION OF THE GOLD STANDARD

Under the Gold Standard Act, which became effective May 13, 1925, Great Britain attempted to restore substantially the pre-war conditions in money and banking, with, however, one very important difference. Under this act the Bank of England, while not required to re-

deem its notes and the currency notes in *gold coin*, was required to pay out gold in the form of *bars* containing approximately 400 ounces of fine gold in exchange for its own notes and the currency notes, both legal tender, at the rate of 3 pounds, 17 shillings, and 10.5 pence per standard ounce. The effect of this provision was to bring the paper money to a par with gold, but to keep gold coin out of circulation; only the Bank of England had the power to demand to have the gold bullion made into coin at the Government Mint. Thus, practically the entire stock of gold in the country was conserved as gold reserve at the Bank of England. The act provided that the embargo on gold exports, which expired in December, 1925, should not be renewed, and that meanwhile the Bank of England should be granted a license to export gold freely to meet foreign trade requirements. In short, England had re-established the gold standard in that modified form referred to as the gold bullion standard.

As temporary measures, to prevent an attack on the pound sterling by speculators and an external drain of gold, the British Government arranged for a loan of \$100,000,000 with J. P. Morgan and Company, and the Bank of England arranged for a loan of \$200,000,000 from the Federal Reserve Bank of New York — neither loan to be actually used unless needed. The mere knowledge that these credits were available prevented a speculative attack on sterling, and the credits themselves were never utilized. The New York Federal Reserve Bank loan, incidentally, was severely criticized in some quarters in the United States as an unwarranted use of federal reserve bank funds.

Thus, not only was the old unit of value, the gold pound of 113.002 grains of fine gold, restored in Great Britain, but the Bank of England remained as before the war the core of the English banking system, with even more definite control over the rate of foreign exchange and the import and export of gold. In the realm of the joint-stock banks there had been important changes. By the process of amalgamation the number of joint-stock banks had been reduced from 43 in 1913 to 18 at the end of 1925. In this group the Big Five — the Midland, Lloyds, Barclays, Westminster, and National Provincial — were dominant, and held approximately five times as many deposits as the other thirteen combined.¹ In short, centralization in banking in England had become extreme. As for the relations between the joint-stock banks as a group with the Bank of England and with other financial houses in Great Britain, these remained on the whole the same as described in our chapter on Central Banks; that is, the same as before the war.

¹ Willis and Beckhart, *Foreign Banking Systems*, p. 1165. Henry Holt and Company.

There were, however, in 1925, certain fundamental unfavorable factors making difficult the maintenance of the gold standard at the old mint par of exchange. In the first place, the combined total of currency notes and bank of England notes outstanding at the end of 1924 was £396,361,000 and deposits of the Bank of England were £174,291,000, making a grand total of £570,652,000, against which the total gold reserve of the Bank amounted to only £155,590,000, or 27.3 per cent. At the same time the total indebtedness of the Government was not far below £8,000,000,000, on which the annual interest charges were in excess of £300,000,000. This represented a very heavy charge against the current revenues of the Government, and the burden was made the greater by the fact that more than half the debt was external. An external debt with interest charges is a more serious affair than an internal debt, for two reasons: first, interest payments made by a government to its own people represent income which may be made taxable and thus provide revenue for meeting such payments: interest payments on external debt do not become part of the annual revenue of the people. Second, external payments of interest and principal represent a demand for foreign exchange which, added to other demands for exchange, may increase the total demand to such an amount relative to supply that it becomes difficult to maintain the rate of exchange at par without exports of gold, and without a weakening of the gold reserve as a consequence.

Another unfavorable factor was the deflation in prices that was an inevitable concomitant of the restoration of the gold standard. English prices on a paper basis had risen more than prices in the United States and other gold standard countries, and a restoration of prices to a gold basis in England involved deflation to an extent which placed English prices more nearly on a par with prices in the United States. The rise in the exchange value of the pound necessitated also a readjustment of English prices downward relative to prices in paper money countries in accordance with the purchasing power parity theory. On top of this deflation of English prices to a gold standard basis, there developed a further world-wide deflation of gold prices. With both the British Government and a large proportion of the people heavily involved in debt, contracted at a high price level, payment of the debt with interest became increasingly difficult as prices fell. The difficulty was increased by the tendency of falling prices to result in a decline in business activity and depression. How all these unfavorable factors and others not here named eventually led to the crisis of 1931 and the collapse of the gold standard in England will be described in the next chapter.

Meanwhile, we must consider briefly the war and post-war monetary developments in France and Germany.

5. INFLATION IN FRANCE AND DEPRECIATION OF THE FRANC

In various respects the financial developments in France during and after the war were similar to the developments in Great Britain. At the outbreak of the war the dollar exchange value of the franc rose sharply as a result of the efforts of the French bankers and financiers to mobilize their financial resources in Paris, just as the value of the pound had risen from similar efforts of the British. Then, as French purchases of war materials in the American markets led to an abnormally heavy demand for dollar exchange, the value of the franc dropped below par and dollar exchange in Paris rose above the gold export point — gold payment having been suspended by the Bank of France promptly on August 5, 1914, to prevent a depletion of its gold reserves. By April, 1916, the franc had fallen from the mint par of 19.3 cents to 16.5 cents. From then to March, 1919, the franc was stabilized or pegged at about 17 cents by the same methods used in stabilizing the pound, the operation involving loans of about \$3,000,000,000 by the United States Government to the French Government.

When the pegs were removed from the franc early in 1919, it fell sharply to around 6 cents in 1920, recovered to about 9 cents in 1922, and then declined to a new low of around 2 cents in 1926. This long-continued decline of the franc was caused by a combination of factors, but the most direct and the primary cause of the decline was the continued expansion of the French bank-note currency, which in itself was the result of the inability of the French Government to balance its budget, and which led to a great rise in internal prices.

At the beginning of the war, the French Government resorted at once to loans rather than to taxation as the primary means of financing the war. In part these loans took the form of advances to the Government by the Bank of France, involving a heavy increase in the Bank's issue of its own notes. The fact that the legal maximum limits of the note issue had been fixed at 6,800,000,000 francs before the war represented no great obstacle to unlimited inflation. The Government merely raised the legal limit, first to 12,000,000,000, and later to whatever higher figure it deemed expedient. By July, 1920, the limit had been raised to 43,000,000,000. Even this figure was greatly exceeded in later years. The peak of inflation was reached in 1926, when the index of French prices mounted to 836, pre-war level being represented by 100.

6. STABILIZATION OF THE FRANC

In 1926 the French Government, under the leadership of Poincaré, took vigorous action to balance the budget and to stabilize the foreign exchange value of the franc. As a result the franc rose before the end of the year to approximately 4 cents, and remained at this figure until the restoration of the gold standard by the Act of Parliament of June 25, 1928. As a means of stabilizing the franc, the Bank of France was authorized by law to buy gold and silver hoarded by the public at a price above their nominal value, and to purchase bills of exchange directly in the open market. Payment for the gold and silver and the bills of exchange was made in the form of the Bank's own notes and this added to the inflation of the currency, but the heavy purchases of exchange by the Bank sustained the value of the franc in the foreign exchange market, despite the inflation of the note issue which, taken by itself, would have tended to depress the franc. By its heavy purchases of bills of exchange the Bank of France not only sustained the value of the franc, but it gained control over the foreign exchange market and the value of the franc because it could enter the market both as buyer and seller. It could depress or raise the value of the franc at will.

Confidence engendered by the better financial conditions led to a pronounced movement toward the "repatriation" of French capital that had been invested abroad in large amounts during the period of depreciation of the French currency and the "flight from the franc." Naturally, when Frenchmen sold investments in other countries to foreigners, either they had for sale bills of exchange payable in other countries, or buyers of their investments were in the market for bills payable in Paris. As a result there was either an increased supply of foreign exchange in Paris, mainly of dollars and pounds, or an increased demand for francs, mainly in London and New York. In either case the exchange value of the franc tended to be forced up thereby. This upward tendency of the franc not only accelerated the movement for the repatriation of private French capital held abroad, but induced speculators for the rise to enter the market as purchasers of francs.

To prevent an unwelcome rise in the franc which might hamper the export of French goods and precipitate internal deflation of prices, the Bank of France was forced to buy enormous quantities of bills payable in foreign countries — its purchases of such bills running into billions of francs monthly during the early part of 1927. These heavy purchases had two important consequences. First, they increased by billions of francs the circulating notes of the Bank of France, notes having

been used in payment for such bills in Paris. Secondly, they resulted in enormous balances in foreign financial centers, mainly in New York and London, being built up by the Bank of France. These enormous short-term investments of the Bank of France in London and New York gave the Bank, in effect, a call upon the gold reserves in those centers equal in amount to its investments, and represented a constant threat against banking stability in both England and the United States, but particularly in England, whose gold reserves were limited in amount. The Bank of France permitted most of its huge balances to remain in London and New York until the European monetary crisis of 1931 and the scramble for gold reserves of 1931 and 1932 developed, with results to be noted in the next chapter.

7. RESTORATION OF THE GOLD STANDARD IN FRANCE ¹

By such measures as just detailed, the Bank of France in close co-operation with the Government had stabilized the franc at a little under 4 cents for a period of eighteen months, when, by the monetary law of June 25, 1928, the gold standard was restored to the country. The essential provisions of this law were as follows:

The franc was made the unit of value and was defined as a fixed amount of gold, with a value approximating the value of the paper franc during the preceding eighteen months, par in terms of the American dollar being \$0.0392. The notes of the Bank of France, which had been inconvertible since August, 1914, were made convertible into gold upon demand. Conversion could not be made, however, into gold coins in small amounts, but only into gold bullion in amounts — fixed later — of not less than 215,000 francs. The new gold standard of France became, then, what is known as the bullion standard. The object of the restriction on the free convertibility of notes in small amounts into gold coin was to conserve the gold reserve of the Bank, which might otherwise have been dissipated by dribbling in the form of gold coin into general circulation and private hoards.

A legal minimum ratio was established of 35 per cent between the gold reserve of the Bank and the aggregate of its note circulation and demand deposits. This 35 per cent was not to include foreign exchange holdings of the bank, so that the gold standard of France was an actual gold standard, and not merely a gold exchange standard, with the gold reserve representing merely deposits in some other country, where they might or might not be available in case of need. The new 35 per cent

¹ See *Annual Reports of the Bank of France*, reprinted in the March number of the *Federal Reserve Bulletin*, 1928, 1929, 1930.

cash reserve provision was substituted for the old method of limiting note circulation by a legal maximum upon the amount of notes to be issued, which, as has been observed, could easily be set aside by act of Parliament. Quite obviously, the 35 per cent legal minimum can be just as easily set aside as the old legal maximum — the one is no more of a check on inflation than the other, in that respect; and in the event of the accumulation of large gold reserves, the 35 per cent minimum cash reserve requirement automatically permits inflation, whereas the old legal maximum did not automatically provide for inflation on the basis of an influx of gold. Before the war, as has been noted in an earlier chapter, the Bank of France normally maintained a cash reserve ratio in excess of 35 per cent, so that the new law placed no restraint on the Bank which in former times it did not exercise voluntarily.

Before the war the Bank could count silver coins as part of its reserve, and could pay these out at its pleasure in lieu of redeeming its notes in gold. Under the law of 1928 the Bank could no longer consider its silver as cash reserve, but had to transfer it to the Government at its bullion value. It thus lost its old method of controlling foreign exchange rates and the imports and exports of gold — that is, the method of charging a premium on gold over silver. As an offset to this curtailment of its power, the Bank was given by the law of 1928 the power to purchase securities and short-term commercial bills for account of foreign banks of issue, to guarantee them, and to discount them before their maturity. This provision enables the Bank of France to perform services for other central banks similar to services which long had been rendered to it by them. Through such operations the Bank has the power to intervene directly in the short-term capital market by purchases and sales of securities, and in this way to strengthen its control over the credit and currency situation.

8. THE DEVALUATION OF THE FRANC

Obviously, the all-important change effected in the French monetary system by the law of 1928 was the devaluation of the franc from a pre-war value of 19.3 cents to 3.92 cents, a devaluation of approximately 80 per cent. This great devaluation naturally had important consequences. It reduced the sum due from debtors to creditors, in terms of gold, 80 per cent below the amounts which would have been required to meet such payments if the franc had been restored to a gold basis at its pre-war value of 19.3 cents. It prevented the necessity of a tremendous deflation of prices and credit, and thereby avoided a severe depression in industry probably long-drawn-out and involving a great

increase in unemployment. In these respects results in France were in striking contrast with the results of the restoration of the gold standard, without devaluation of the pound, in Great Britain. The devaluation of the franc reduced the financial burden on the French Government, which would otherwise have been unbearable, to one that seemed within its capacity to bear, even though a heavy external debt, due mainly to the United States, remained payable in gold on a pre-war basis. Thanks to the devaluation of the franc, the price level in France was not seriously disturbed by the restoration of the gold standard. The Federal Reserve index of wholesale prices in France stood at 621 in June, 1928, and at 588 in December of that year. In June, 1929, it still stood at 598, and there was no substantial recession from this level until well along in 1931, when the industrial depression was deepening all over the world and financial collapse in Germany and England was impending. The most serious deflation in prices in France had occurred prior to the restoration of the gold standard, when the Government was undertaking to stabilize the franc by exchange operations in 1926 and 1927. While the Government still continued to experience difficulty in maintaining a balanced budget after 1928, the Bank of France was easily able to maintain redemption of its note issues and to sustain the foreign exchange value of the franc. The gold standard seemed firmly re-established.

Aside from the devaluation of the franc and the change in the note issue and gold reserve provisions for the Bank of France and the Bank's altered position in respect to the control over foreign exchange rates, no great changes resulted in the French banking system from the war. The great credit institutions had found it necessary to invest a large proportion of their funds in French government securities and the banks in general were compelled to reduce their holdings of foreign securities. During the war the great credit institutions lost some of their branches, but after the war the movement for the expansion of the number of branches was renewed with vigor, so that the number of branches rose to new high levels.

9. INFLATION IN GERMANY DURING THE WAR

At the beginning of the World War, Germany's stock of money in circulation amounted to approximately 6,000,000,000 marks, of which nearly half, or about 2,750,000,000 marks, was gold. In addition to the gold in circulation, there was a stock of 1,350,000,000 marks in the Reichsbank, serving mainly as cover for the note circulation and deposits liabilities of the Reichsbank. The total amount of bank notes

in circulation was about 2,000,000,000 marks, most of which consisted of notes of the Reichsbank, which, as explained in our chapter on Central Banks, had a practical monopoly of note issue in Germany. The amount of government paper money (*Reichskassenscheine*) in circulation was only about 240,000,000. The gold standard was firmly established and all the bank notes were redeemable in gold upon demand. The unit of value, the gold mark, was worth at par in United States money \$0.238.

With the outbreak of the war the redemption in gold of the notes of the Reichsbank was suspended, while at the same time successful efforts were made to withdraw gold from circulation in order to increase the Bank's gold reserves, which were subsequently increased to about 2,500,000,000 marks. The Government had, however, decided upon the policy of financing the war by loans and inflation rather than by taxation, and in order to foster inflation the law regulating the Reichsbank's reserves was changed as follows:

Cash reserves covering the note issues of the Bank, which had been required to consist exclusively of gold to the amount of one third of the notes outstanding, were now permitted to include paper money of two kinds called *Reichskassenscheine*, and *Darlehnskassenscheine*. The former represented government paper money in the form of treasury notes, similar to our greenbacks, and the latter represented a form of emergency currency issued by loan bureaus, or *Darlehnskassen*, to individuals, small banks, co-operative societies, and savings institutions, against the pledge of commodities or securities. In place of the bills of exchange which had been required to cover that two thirds of the Bank's note issue not covered by gold, the Reichsbank might now substitute discounted three months treasury bills. The tax of five per cent on note issues in excess of the maximum allowed by law was repealed.

With the way to inflation thus made easy and with the expenses of the Government proving very heavy, inflation naturally followed, and on a scale greater than had been anticipated. By the end of 1918 — that is, shortly after the end of the war — the note circulation of the Reichsbank had risen to 22,188,000,000 marks, and the government treasury notes and the loan bureau notes had increased to an aggregate of 10,465,000,000, a total paper money circulation of 32,653,000,000 marks, or more than five times the total amount of money in circulation in Germany before the war. At the same time the loans and deposits of the Reichsbank and of the eight "great banks" of Germany showed a similar growth.

The method of inflation was substantially as follows: From the be-

beginning of the war the Reichsbank, under the domination of the Government, made short-term advances to the Government by discounting treasury bills. These advances took the form either of deposits credited to the Government's account with the Bank or of the Bank's circulating notes delivered directly to the Government. When the Government received and spent such notes, the currency in circulation was correspondingly increased. When the Government received its advances in the form of deposits, it transferred these deposit credits in a short time to its creditors. Twice a year the Government floated long-term bond issues, from the proceeds of which it reduced its short-term loans at the Reichsbank. Since these long-term bond issues were floated in amounts far in excess of the savings of the people who bought them, they tended to be paid for in large part by loans at the various banking institutions, the loans being secured by the bonds as collateral. Thus, the loan and deposit accounts of the whole banking system were inflated.

The great increase in the quantity of money and bank credit, combined with the war demand for goods and the scarcity of many classes of goods, naturally caused a substantial rise in prices. The average increase in prices was, however, less than might have been expected from an application of the quantity theory of money. This was due in part to the government regulation of prices. Based upon 1913 prices as 100, the index of 38 commodity prices in Germany stood at 245 at the end of 1918, in terms of paper money, and, when converted to a gold basis, at only 124.

10. THE EXCHANGE VALUE OF THE MARK

The mark, like the pound and the franc, rose above par in terms of dollars at the outbreak of the war and then declined as the balance of international payments turned against Germany and gold was lacking to restore the balance, drifting downward with occasional recoveries until it fell below 14 cents in the latter part of 1917. Then, when Russia withdrew from the war, and it seemed that Germany might win, the mark rose to above 20 cents early in 1918. A few months later, when the fortunes of war turned definitely against Germany, the mark dropped sharply, until in December, 1918, it stood at about 12 cents, or approximately 50 per cent of par.

Although the Germans undertook, in January, 1916, to prevent further depreciation of the mark by placing all foreign exchange dealings under the supervision of the Reichsbank, they did not succeed in stabilizing or pegging the mark as the pound and franc were pegged. The reason was that Germany could not obtain enough foreign loans to

offset her unfavorable balance of international payments. Even after obtaining what loans she could from Switzerland and Scandinavian countries, practically the only loan markets open to her after the United States entered the war, and after selling all available German-owned securities in the foreign markets and exporting what gold she could spare, the balance of payments was still against Germany, the supply of marks was greater than the demand, and the exchange value of the mark sagged. Nevertheless, when the war ended, the financial position of Germany, when observed simply from the point of view of the degree of price, credit and currency inflation, and the degree of depreciation of the mark in the foreign exchange markets, did not seem hopeless. Restoration of the gold standard with the pre-war value of the mark of 23.82 cents would have seemed possible, although necessitating a sharp contraction of bank credit and currency and a decline of perhaps 50 per cent in prices to bring the price level on a gold basis in line with the world level of prices. However, the national debt was already considerably in excess of 100,000,000,000 marks, and, on a gold basis, without being scaled down, this would have proved to be a heavy burden, relatively much heavier, considering Germany's capacity, than our own national debt of approximately the same amount at the time. The additional burdens and financial difficulties growing out of military defeat made restoration of the gold standard in Germany on the pre-war basis impossible.

After the armistice the German Government continued to borrow funds from the Reichsbank and to balance its budget with the printing press, and the process of inflation gathered momentum. The greater the deficits of the Government became, the more it borrowed from the Reichsbank and the more currency was placed in circulation. The more the currency expanded, the higher prices rose, and with prices government expenses, and the greater became the subsequent borrowings. Thus, the vicious circle of expanding currency, rising prices, and growing government deficits was set in motion. As domestic prices rose in terms of the paper mark, the foreign exchange value of the mark fell. In accordance with the purchasing power parity theory, the value of the mark in terms of dollars would have tended to be equal to the par value of the mark, \$0.2382, multiplied by the United States price index and divided by the German price index, thus:

$$\$0.2382 \times \frac{\text{United States Price Index}}{\text{German Price Index}} = 1 \text{ Mark}$$

At this rate of exchange a dollar in the United States theoretically

would have bought as many goods as could have been bought with a dollar's worth of marks in Germany. The exchange value of the mark fell more rapidly, however, than its purchasing power parity, so that by March, 1920, the exchange rate was only 1.05 cents, while its purchasing power parity calculated on the best available price indexes was 3.27 cents. In large measure this excessive fall in the exchange value of the mark was brought about by speculators who were discounting further depreciation of the internal value of the mark resulting from expected further inflation of the currency, but there were some who contended, not without apparent reason, that the further expansion of the currency and the consequent inflation were the result and not the cause of the decline in the foreign exchange value of the mark. Passing by temporarily this controversy as to cause and effect, we may note some of the effects of the unequal decline in the external and the internal value of the mark, representing merely one of many similar developments that were to cause alarm and disturbance in international trade relations.

American importers and others, being able to buy German exchange at the low rate of 1.05 cents per mark at a time when the purchasing power parity rate was above 3 cents, were able to import goods from Germany at about one third of the cost that would have been entailed with the exchange value of the mark equal to its purchasing power parity rate. To the extent that traders were able to take advantage of this disparity between the exchange value of the mark and the price level in Germany, they bought goods in Germany at such low cost that they were able to dump them in their own domestic markets at prices ruinous to domestic producers. At the same time German importers had to pay three times as much for imported goods in terms of German marks as they would have paid with the exchange value of the mark equal to its purchasing power parity. Naturally, this dumping of German goods on foreign markets at ruinously low prices alarmed all foreign competitors, who had frightful but ridiculous visions of the whole world being swamped with German goods. At the same time German manufacturers, dependent upon foreign countries for raw materials, were equally alarmed at the ruin facing them as the result of costs shooting upward as the exchange value of the mark fell.

In large measure these alarms were groundless, since the state of affairs on which they were based was essentially temporary in nature. The low exchange value of the mark tended to increase exports and to reduce imports to such an extent that the exchange rate tended to rise close to the purchasing power parity rate. Moreover, the high cost

of the imported goods tended to raise the price level in Germany, not only directly by increasing the cost of goods imported, but indirectly by its effect on the costs of other goods into which the imported goods entered as a cost factor, and the growing scarcity of those classes of goods being exported in unduly large amounts tended to raise the prices of them. In short, in this case, as in other similar cases, internal prices in terms of paper money and the foreign exchange value of the currency tended to adjust themselves to one another. A wide divergence between the exchange value and purchasing power parity tends always to be in process of correction, so that the calamities (or the blessings) which are expected to flow from this divergence tend always to be smaller than anticipated.

11. THE POST-WAR DIFFICULTIES OF GERMANY

The post-war difficulties of Germany leading to continued inflation of the currency were of two kinds: first, difficulties of meeting international payments, and second, difficulties of balancing the budget. During the war Germany, cut off more or less completely from the rest of the world, and requiring enormous quantities of goods for war consumption, had been denuded of raw materials needed to feed her manufacturing industries. Then, with the collapse of the mark immediately after the war, the so-called clearance sale — abnormal exports of German raw materials and manufactured goods at sacrifice prices resulting from the decline of the foreign exchange value of the mark below its purchasing power parity rate — stripped the country still more bare of raw materials and supplies of goods available for export. The net result of these developments was an increase in the quantity of imports required to maintain the manufacturing plants of Germany as going concerns.

This alone would have tended to make it difficult for Germany to make international payments received balance such payments made, and thus sustain the foreign exchange value of the mark. But there were three additional important factors intensifying this difficulty. First, Germany by the treaty of peace had been deprived of substantial portions of her natural resources at home and of her territorial possessions overseas, and this increased her need for imports and reduced her available exports. Second, she had been deprived of her merchant marine and hence of a great source of revenue for meeting external payments. Third, she was put under obligations to make enormous payments on reparations account, and these, whether made in cash or in kind, had the effect of increasing the balance of international payments against

her. On top of all these already insuperable difficulties in the way of meeting her international payments, there were piled the high and rising import duties of the countries to whom payment was due, who adopted the studiously stupid contradictory policies of demanding huge payments from the vanquished enemy and of refusing to take such payments when tendered in the only form in which they could be made, except on condition of exacting additional payments for the favor of permitting themselves to be paid.

When as the result of these conditions the demand for foreign exchange in Germany exceeded the supply, the value of the mark naturally fell. This decline in the mark brought inevitably either one or the other of two disastrous consequences. If the decline in the external value of the mark was not accompanied by a proportionate decline in its internal value and a proportionate rise in prices, the number of dollars, pounds, or francs received for a given quantity of German goods exported declined, and thus tended to increase the unfavorable balance of payments. If, on the other hand, prices in Germany rose in proportion to the decline in the value of the mark or in proportion to the rise in the cost of dollars, pounds, and francs, an apparent need was developed for an increase in the currency, since a given volume of trade cannot be carried on at rising prices without an increase in the quantity of money unless some factor other than M in the equation of exchange proves to be sufficiently elastic to make the equation of exchange balance. And, in fact, the apologists for inflation of the currency in Germany did not fail to use the argument that more currency was required to meet the shortage in purchasing power resulting from a decline in the exchange value of the mark and the rise in prices.

While the difficulties of meeting international payments did undoubtedly depress the external value of the mark, and while this decline of the mark did doubtless react upon domestic prices by increasing the cost of imported goods, and thus appear to involve the necessity of further issues of paper money, the more direct cause of inflation in Germany was the fact that the Government was unable or unwilling to balance its budget and continued to borrow at the Reichsbank, with a consequent expansion of the bank-note issue. Aside from the budget-balancing difficulties common to all the participants in the war — an inflated expense account, heavy interest payments on funded and floating debt, and a scarcity of good sources of revenue — the German Government was saddled as already indicated with enormous payments on reparations account, amounting to billions of marks annually. The difficulties of the Government in balancing its budget were intensified

by the French occupation of the Ruhr and the consequent policy of the German Government of financing the "passive resistance" in the occupied territory. Government expenditures skyrocketed, bank-note issues multiplied, and prices soared until the purchasing power of the mark was practically zero. By the close of 1923 the Reichsbank's note circulation had reached the astronomical figure of approximately five hundred quintillions (500,000,000,000,000,000) of marks.

12. PRELIMINARY STABILIZATION OF THE MARK

The absolute collapse in the value of the paper mark to a point where the money was worth more as raw material for paper mills than as currency necessitated a movement for the restoration of a usable currency. Preliminary stabilization of the currency was accomplished by means of a new institution, the Rentenbank, and a new unit of value, the rentenmark. By decree of October 15, 1923, the Rentenbank was established with authority to issue bank-note currency to the amount of 3,200,000,000 rentenmarks. The bank, having no adequate amount of reserve available, was permitted to secure the notes issued by a mortgage of the amount issued upon the whole of German production, industry, and trade. Obviously, a mortgage in terms of rentenmarks was worth no more than the rentenmarks themselves; if these were worthless, the mortgage would be worthless and would offer no sustaining value. It was necessary, therefore, to give the rentenmarks more substantial support than such mortgages, whose value was largely psychological, and this support was provided as follows:

First, the rentenmark was proclaimed equivalent to 1,000,000,000,000 paper marks, and this, on the basis of the exchange value of the old mark at the time, gave the new mark some semblance of exchange value. Secondly, the quantity of the new currency to be advanced to the Government was limited to 1,200,000,000 marks, and further borrowing of the Government at the Reichsbank was prohibited, so that renewed inflation was throttled at its source. Finally, tax payments to the Government thereafter were required to be in gold, at the rate of one gold mark to 1,000,000,000,000 old paper marks, thus inferentially placing the rentenmark on a par with gold.

The Rentenbank and the rentenmark represented temporary expedients to supply the country with a stabilized currency until a more permanent solution of the currency problem could be found. The Gold Discount Bank represented another temporary expedient. It was established in March, 1924, to supplement the operations of the Rentenbank. The rentenmark notes issued by the Rentenbank, being secured

only by a mortgage on German industry and not by a gold reserve, could not serve well in international payments. Consequently, the Gold Discount Bank was established with a capital of £10,000,000, supplied by the Reichsbank and a consortium of leading banks, and was given the right to issue bank notes to the amount of £5,000,000, a cover or reserve for these notes to be established of 50 per cent in gold and 50 per cent in foreign exchange. The notes were to circulate only outside the country. No notes were actually issued, the bank being able to perform its operations in foreign countries without resort to note issue.¹

13. FURTHER STABILIZATION MEASURES

The more permanent stabilization of the German currency and industry was accomplished by the reorganization of the Reichsbank in accordance with laws passed in August, 1924, in close agreement with the recommendations of the Dawes Committee, which had been appointed some months earlier for the purpose of finding a solution for the muddled problem of reparations. The Dawes Committee plan, in addition to providing for the reorganization of the Reichsbank and the stabilization of the currency, drew up a schedule of reparation payments to be made by Germany, starting with a payment of 1,000,000,000 gold marks in the first year, 1924-1925, and increasing gradually to 2,500,000,000 marks in the fifth year. These sums were to be raised by Germany through taxation and the imposition of special charges upon the railroads and German industries. The plan recognized the double difficulty of Germany involved, first, in raising the requisite amount of revenue within the country, and second, of effecting a transfer of the amount to foreign countries without destroying the exchange value of the mark. Obviously, if the total payments due to foreign countries, including reparation payments, exceeded the sums due to Germany for goods and services exported plus the amount of loans obtained in foreign countries, the maintenance of a stable value for the new mark currency would become impossible.

As reorganized under the law of 1924, the Reichsbank was given two boards of control, a general board consisting of seven German members and seven foreign members, and a managing board consisting of German members exclusively. The managing board was given control over the actual administration of the bank, but was itself placed under the control of the general board. Under this law the peculiar situation was created of a central bank of a leading country of the world being placed for a time under the domination of foreign members of its

¹ Wills and Beckhart, *Foreign Banking Systems*, pp. 670-671.

board. Before the war, it will be recalled, the Reichsbank was controlled by the Imperial German Government.

Under the new law the Reichsbank was required to maintain a 40 per cent reserve against notes in circulation, three fourths of which had to be in gold held either in the bank's own vault or on deposit with foreign banks of issue. The remaining fourth could be in the form of foreign exchange, including under that head checks on foreign banks, deposits with banks in good standing in foreign financial centers, foreign bank notes, and bills of exchange maturing within fourteen days. Under special circumstances the reserve percentage might be permitted to drop below 40 per cent, but under these conditions, a deficiency tax on a sliding scale had to be paid to the Government. Under the new law the notes were made redeemable in gold coin or bullion or in foreign exchange, but actual resumption of gold payment was deferred, and unrestricted gold payment and unrestricted operations in foreign exchange did not become effective at any time between the stabilization of the currency in 1924 and the financial collapse of 1931. Nevertheless, by means of strict control over foreign exchange operations the mark was stabilized at near its par value in foreign gold currencies. This stabilization was made possible only, however, with the aid of huge foreign loans amounting to approximately 5,000,000,000 marks during the years 1924-1927 inclusive, beginning with the Dawes stabilization loan of 1,000,000,000 marks. These foreign loans, most of which were floated in the United States, amounted roughly to the sum of the reparation payments expected from Germany, the ultimate destination of most of which was the United States.

Aside from the important changes made in the organization of the Reichsbank, no profound changes resulted in the German banking system as a consequence of the war until the collapse of 1931, to be briefly considered in the following chapter. The great credit banks (*Grossbanken*) survived the war, and after the war some further progress was made in the movement toward concentration, already far advanced before the war. Essentially the German banking system consisted after the war, as before, of a few great banks controlling through their affiliated banks and branches practically the entire commercial banking resources of the country. In this respect it was quite similar to the English and French banking systems, and quite unlike our own.

11. CONCLUSIONS

In concluding this chapter it may be of interest to compare broadly the results of war inflation of the currency in England, France, and

Germany. In England, inflation was kept within comparatively moderate limits, and after the war an attempt was made, which was to prove unsuccessful, to restore and maintain the gold standard with the pound at its old gold value of 113.002 grains of pure gold or \$4.8665 in terms of our own gold currency. The "sanctity of private contracts" and the good faith of the British Government were thus preserved temporarily. The penalty was rather severe deflation and a correspondingly heavy burden placed upon debtors, including the Government, of repaying in gold coin during a period of low prices debts contracted in large measure in paper money during a period of high prices and high money incomes.

In France, inflation having proceeded much farther than in England before stabilization of the currency could be achieved, the Government bowed to the inevitable and recognized the impossibility of paying its debts in terms of francs of the old gold standard. The franc was devalued to about one fifth of its former weight in gold, and debts were thus in effect repudiated to the extent of approximately 80 per cent, so that the debt burden was made supportable both to the Government and to private debtors. In respect to debts created during the period of extreme inflation, this repudiation represented no great injustice, since such debts were created as paper-money debts and not as gold-money debts, and well-informed creditors could not reasonably have expected repayment in terms of gold francs of the old standard.

Devaluation of the franc not only had the advantage of relieving debtors of an intolerable burden, but also prevented the necessity of a period of drastic deflation in prices accompanied inevitably by financial collapse and industrial depression. The high prices of the paper period could not have been maintained in terms of the old gold franc without so tending to encourage imports and discourage exports as to denude the country of its gold reserves in the settlement of unfavorable international trade balances. While the devaluation of the franc and the 80 per cent repudiation of its debts may lay the French Government open to the charge of breach of faith and violation of the sanctity of contracts, its action at the time must be regarded as unavoidable. And it may be observed that any government which embarks recklessly on a policy of inflation must reckon on the necessity of making such breaches of faith; the sanctity of contracts is in effect broken when the Government adopts the policy of inflation, rather than when the Government in the end through necessity confesses its inability to pay. The spendthrift should be condemned rather for his reckless borrowing and wild expenditures than for his inability to pay at the time of reckoning—for what he can help rather than for what he cannot.

CONCLUSIONS

In Germany, repudiation of debts was practically complete — 100 per cent rather than merely 80 per cent as in France. When the Government announced that the new rentenmark was to be valued at 1,000,000,000 old paper marks, it officially pronounced the old paper marks practically worthless, and debts payable in them valueless, except in certain cases where some sort of revaluation on a more liberal basis was provided for by law. Naturally, most of the enormous burden of debt of the Government had been incurred at inflated levels, so repudiation of this debt did not represent injustice on the huge scale the astronomical figures of the debt would indicate. Repudiation or drastic devaluation had become inevitable in Germany after the extreme inflation of 1922 and 1923. Repayment in gold marks of the old standard had not only become impossible, but would have represented gross overpayment of creditors if it had been possible. Nevertheless, repudiation did represent grave injustice to those creditors whose original advances had pre-dated the period of inflation. It has been estimated that before the war the debts in Germany secured by landed property, private mortgages, mortgage bonds, etc., aggregated about 40,000,000,000 gold marks, or one sixth the total wealth of the country, or about \$10,000,000,000 dollars of our money. After stabilization and revaluation at the rate of one trillion paper marks for one gold mark, the total value of this huge sum of debts was .04 of one mark, or one American cent. In addition to this great amount of pre-war debts, most of which presumably had remained unpaid at the end of the war, many new debts had been created during the war and in the early post-war years, when paper marks still had a substantial value. Repayment of such debts in old paper marks — repudiation, in other words — represented gross injustice. In some cases and to some extent such injustice was mitigated by a process of revaluation, so that old debts created at old prices were repaid in part in gold marks — in some cases to the extent of 25 per cent of the old value.¹

By this process of repudiation the German Government was in large measure freed from the burden of internal debt and interest payments thereon, and so were German business organizations. While it has often been stated that by this process Germany gained immense advantages in international trade over other nations, since German producers were thereby relieved of heavy costs of production in the form of tax and interest payments, sight should not be lost of the fact that for every dollar which the Government or other German debtors saved by this process, another dollar was lost by the creditors.

¹ Willis and Beckhart, *Foreign Banking Systems*, p. 641.

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¹ Willis and Beckhart, *Foreign Banking Systems*, p. 641.

class of thrifty Germans were impoverished by this destruction of their savings, and while the Government thus cleared itself of a charge on its income, it also by the same process destroyed a large part of the source of its income. Repudiation did not represent a clear gain for the German people. Nevertheless, it did clear the financial atmosphere, and might have saved the nation from a long-drawn-out process of deflation and industrial depression had not its problems been complicated by the requirements of reparation payments, the lack of stabilization of the currency of its foreign trade competitors, and international trade barriers in the form of high protective tariffs and otherwise.

CHAPTER XXVII

THE INTERNATIONAL CREDIT CRISIS OF 1931-1932

I. THE TEMPORARY REVIVAL OF 1931

IN THE early months of 1931 hopeful signs began to appear that the depression which had been deepening in the United States since the stock market crash of October, 1929, was approaching its end. The tendency of commodity prices was still downward, but the manufacturing industries as a whole were becoming more active and the increase in unemployment was slowing down, even though not completely checked. The Federal Reserve Board index of production of manufactures, adjusted for seasonal variation, rose from 82 in December, 1930, to 87 in March, 1931, and held at this level for the three months of March, April, and May. Bank suspensions, which had reached the unprecedented number of 1345 in the year 1930, and the high mark of 314 in the single month of December, declined to 202 in January, 1931, and to 77 in February, or eight less than in February of the preceding year. Further evidence of the apparent passing of the worst phase of the financial crisis was the rise in bond prices, Standard Statistics index of 60 high-grade bonds rising from 97.8 in December, 1930, to 100 in March, 1931. The more mercurial and sometimes prophetic common stock prices rose more emphatically, Standard's index of 421 common stocks moving upward from 109.4 in December to 121.6 in March.

It was soon to become evident, however, that the rift in the clouds of depression early in 1931 represented merely a lull in the financial storm which in a little while was to break with redoubled fury, sweeping down before it financial structures which hitherto had withstood its force. The second phase of the storm originated — if one views the matter merely superficially — in an obscure quarter of the world's financial horizon, and to the casual observer in the great financial centers may have appeared to be of no greater relative importance than a small whirlwind licking up the desert's dust. But this new disturbance was to prove not a comparatively harmless and diverting financial whirlwind upsetting a few rickety structures in a limited area, but a veritable hurricane, terrific in intensity and wide in its sweep, rocking the financial institutions of the whole world to their foundations, and bringing many of them down in ruins. Its force was generated not in the tottering financial structure of a dismembered empire, but in the whole

economic system of a mismanaged and unbalanced world. Those who believe that our promising industrial revival of early 1931 was nipped in the bud, and our financial disasters of 1932 and 1933 were brought upon us by the economic and political mismanagement of Europe and through no fault of our own, must be reminded that our own political and economic policies played an important, and in some respects a dominant, rôle in shaping the misguided and disastrous policies of the European states.

2. THE CREDIT CRISIS IN AUSTRIA ¹

Early in May, 1931, the Credit-Anstalt of Vienna, the largest banking institution in Austria, finding itself unable to meet its obligations, appealed for aid to the Austrian Government and the Austrian National Bank. The required aid was promptly given, but the difficulties of the Credit-Anstalt having become known to the general public, a run resulted, and the bank was compelled to obtain further help from the Austrian National Bank by discounting finance bills with the latter. Evidence of strain upon the National Bank — that is, the central bank of Austria — appeared in its weekly statement of May 15, 1931, in the form of an increase in its bill portfolio and note circulation, and a decline in its holdings of foreign exchange — foreign exchange constituting part of the Bank's legal reserve. The consequent decline in the reserve ratio of the National Bank undermined confidence in the Austrian financial situation further. The difficulties of the Austrian banks were intensified by the fact that the Credit-Anstalt on April 20, 1931, had obligations due to foreigners to the amount of 442,000,000 shillings, while the other banks had similar obligations at the time of 380,000,000 shillings, a total of 822,000,000 shillings, or approximately \$115,000,000. A shilling at par was 14.07 cents.

Not only were the Austrian banks placed under pressure to pay these obligations to foreigners, but Austrians themselves, sensing a credit crisis ahead, began to transfer their own funds from Austrian banks to banks in other countries by the process of purchasing foreign exchange from the Austrian banks. The brunt of this demand for foreign exchange fell upon the National Bank, and in the period from April 30, 1931, to October 7, 1931, it lost 847,900,000 shillings of gold and foreign exchange. Total exhaustion of its reserves at home and abroad was prevented only by loans from the Bank of England and the Bank for International Settlements, and by government regulations issued

¹ The development of the credit crisis in Europe is described in the annual reports of the various European Central Banks reprinted in the *Federal Reserve Bulletin*.

October 9, 1931, providing for the strict control of the purchase and sale of foreign exchange. These regulations, similar to exchange regulations issued in other countries during the crisis, confined dealings in foreign exchange to the National Bank and its agents; placed international clearing and credit operations under the control of the Bank; and made it obligatory to declare existing stocks and future receipts of foreign exchange, and to surrender them to the National Bank upon demand. This system of control was effective in checking the rapid decline in the Bank's foreign exchange holdings, but it could not by itself solve the international financial problems of the country. As for the other banks of Austria, they had to meet, not only external drains, but internal drains of their funds as well, when their clients, alarmed by rumors, withdrew an abnormal proportion of their deposits and when the banks had to meet the calls of savings banks and associations which were compelled to draw on their liquid reserves and emergency credits with the commercial banks in order to meet the demands of their own clients. Such pressure placed upon the commercial banks compelled them in turn to lean more heavily on the National Bank which discounted their bills. Despite all these difficulties, however, the complete collapse of the Austrian banking system was averted. In averting complete collapse the so-called "standstill agreements" were of great assistance. By the standstill agreements foreign creditors of the Credit-Anstalt agreed to a two-year moratorium of their claims and creditors of other banks likewise agreed to a prolongation of part of their credit claims.¹

3. THE CREDIT CRISIS IN GERMANY

From Austria the credit crisis spread to Germany and in this larger theater it raged with more violence and with more disastrous results. Foreign creditors of Germany had already grown uneasy because of the growing power of the Hitler Party as evidenced by the elections of September, 1930, and with the failure of the Austrian Credit-Anstalt there came heavy withdrawals of funds from the German banks which rapidly developed into a run on the large banks. If the run had been by German depositors only, the banks might have been saved by the large advances which the Reichsbank was prepared to make to the banks in the form of its bank notes or deposit credit on its books. But the run took the form also of withdrawals of short-term credits by foreign creditors both directly from the banks and from German corporations which in turn drew upon their banks. Repayment of such credits could not be made in German bank notes or credit on the books of the

¹ *Federal Reserve Bulletin*, May, 1932, pp. 305-07.

Reichsbank, but only in the form of gold or foreign exchange, and of gold and foreign exchange the Reichsbank had not enough to meet all demands without restriction. In a short time its reserves would have been totally exhausted.

For a time, when the panic in Germany was gathering momentum, it seemed that the situation might be saved by the proposed Hoover Moratorium, which promised to reduce the demands for international payments made upon Germany, but the extreme caution and dilatory tactics of France prevented the Hoover measure from accomplishing its most immediate purpose, and the panic in Germany swept on. On July 13, 1931, the Darmstadter und Nationalbank was compelled to close its doors, and immediately thereafter a general bank holiday was declared, temporarily closing all the banks in Germany.

By a series of remedial measures the Government and the Reichsbank soon succeeded in reopening the banks and began the task of restoring public confidence in the banking system. Among the remedial measures were a vast extension of credits by the Reichsbank, which increased its holdings of domestic bills 3,000,000,000 marks from the end of May to the end of the year; a special provision of agricultural credits; and the establishment of the Acceptance and Guaranty Bank by a banking consortium with the co-operation of the Reichsbank for the purpose of supporting savings banks and other endangered credit institutions, and of securing or maintaining for them a credit status with the Reichsbank by assuming their bill liabilities.

As in Austria during the crisis, not only were foreign creditors demanding payment of their short-term credits, but panic-stricken citizens were exporting what capital they could through the process of buying foreign bills of exchange. In its efforts to meet such demands for transfer of funds out of Germany, the Reichsbank from the end of May to the middle of July sold more than 1,000,000,000 marks in gold and paid out in gold and foreign exchange almost 2,000,000,000 marks. Of the gold lost, nearly half went to New York, almost one fourth to London and Paris, and smaller sums to Amsterdam and Switzerland. Early in July the Reichsbank obtained a joint loan of \$100,000,000 from the Bank of England, the Federal Reserve Bank of New York, the Bank of France, and the Bank for International Settlements, and it was enabled to draw upon an American contingent credit of \$50,000,000 which had been available to the Gold Discount Bank for a number of years. Despite these credits the Reichsbank was unable to maintain its cash reserve at the 40 per cent minimum, and it was unable also to maintain unrestricted sale of foreign exchange at par.

Rather than to permit a depreciation of the mark in terms of foreign currencies and to precipitate internal inflation of the currency and prices, the Government, in an emergency decree of July 15, 1931, ordered the centralization of all exchange transactions in the Reichsbank, and on July 18 it required the delivery to the Reichsbank of foreign currencies and claims to foreign currencies. Later the control over foreign exchange operations was made even more strict. By such measures combined with standstill agreements restricting in some measure the withdrawal of credits by foreign banks, the Government was enabled to maintain the reichsmark at approximately its gold value and thus avoided the unpleasant consequences of a renewed depreciation of the currency and the danger of a repetition of the disastrous inflation of the earlier post-war years. Having recently experienced the horrors of unlimited inflation, the Germans desired above all else to avoid a repetition of the performance. A by-product of the credit crisis in Germany was the closer supervision of the banks by the Federal Government and a considerable degree of participation of the Government, the Reichsbank, and the Gold Discount Bank in commercial banking operations — a participation which was originally expected to be only temporary in nature.

4. THE CREDIT CRISIS IN ENGLAND

As a tornado sweeping across the plains rises and dips, striking here and there with startling swiftness, so the credit crisis, having struck down the credit structures of Austria and Germany, moved on, and, passing more or less harmlessly by Holland, Belgium, Switzerland, and France, descended with terrific effect on England. In June, 1931, London began to experience heavy withdrawals of funds by banks in other countries, which, fearing further trouble, entered the "race for liquidity." The heavy demand for foreign exchange in London, by means of which funds were being withdrawn from the London market, weakened the pound sterling and led to exports of gold, thus threatening the gold reserves of the Bank of England. To prevent the exhaustion of its reserves the Bank of England was obliged to appeal for aid to the Bank of France and the Federal Reserve Bank of New York, and these two banks on August 1, 1931, extended a joint credit to the Bank of England to the amount of approximately \$250,000,000. The knowledge of the fact that the Bank of England was in distress only made the situation worse and increased the runs on this bank, and a further loan of \$400,000,000 was advanced to it by the Federal Reserve Bank of New York and the Bank of France. The effort was in vain; the demand for

exchange continued to exceed the supply, exports of gold continued, and on September 20, 1931, the world was stunned by the announcement of the British Government of its decision to suspend the gold standard.

Following suspension of the gold standard in England, the foreign exchange value of the pound sterling fell substantially below par, involving a loss by the end of the year of almost \$100,000,000 to the Bank of France, which had holdings of bills in London on the date of suspension of £60,000,000, or about \$292,000,000. The Bank of France was saved from bankruptcy only by the aid of the French Government, which in large measure assumed the loss. Similar losses were sustained on a smaller scale by other banks, including the Bank of Belgium. A further international result of the English suspension was the suspension of the gold standard in Norway and Sweden and some other countries, which elected to permit their currencies to fluctuate in gold value with the value of the pound sterling rather than to attempt to maintain them on a gold basis. As a consequence the currencies of the various nations of the world became divided broadly into three classes, namely, the gold currencies, including the currencies of the United States, France, and lesser countries of the gold bloc; the pound sterling and its satellites anchored to gold and to one another by exchange stabilization funds; and the drifting currencies anchored to no definite base, but floating with the rising or receding tides of inflation. Sweden, while allied to the sterling bloc, undertook to stabilize its currency on a more or less independent basis, with the purpose of maintaining domestic prices on a constant level, embarking thus upon an interesting, and in some measure, at least, a successful, experiment with a managed currency.

5. THE CRISIS DEVELOPS IN THE UNITED STATES

While the credit crisis was sweeping over Europe, industrial and financial conditions were rapidly becoming worse in the United States, but to what extent the deepening of the depression in the United States and the final banking crisis were due to fear arising from the European *débâcle* and to what extent they were the natural results of an extremely unsound condition of banking and finance within this country, it would be impossible to determine. At any rate, industrial activity declined progressively from April to September, when the English crisis came to a head, and continued to decline until the middle of 1932. Prices of securities also declined, bonds as well as stocks, and the prices of farm products, particularly of wheat and corn and cotton, dropped to ruin-

moralized condition of our banking system and of our security markets and the extreme condition of depression of our industries had shaken the confidence of the world in the capacity of our country to maintain the gold standard after England had been driven to suspend. The confidence of the foreigners in our stability was not increased by the spectacle of the hoarding hysteria which had been growing in the United States as indicated by the mounting figures of money in circulation. This hoarding in turn was both a cause and a result of the growing number of bank suspensions, but fundamentally the bank suspensions caused the hoarding rather than the reverse.

6. FIGHTING THE DEPRESSION: THE HOOVER MORATORIUM

While the credit panic was gathering force in Europe, well-informed men, including President Hoover, began to fear that the European crisis would react on our own credit structure, already badly shattered by purely domestic storms, and unable to sustain, without danger, any violent external shocks. So the President sponsored a series of special measures designed to mitigate the severity of the crisis and to check its spread — all of which were destined to prove comparatively ineffective. The various measures used in "fighting the depression" will be briefly considered.

The first effort of the President took the form of the Hoover Moratorium. On June 20, 1931, he announced a proposal for a moratorium on intergovernmental debts and reparations payments, which was intended to ease the financial strain all around, and to be of particular benefit to Germany which was then on the verge of its financial crash. This proposal electrified the political and financial world, and proved to be a strong, but only temporary, stimulant to the securities markets. If the moratorium could have been immediately and completely put into effect, it might have prevented the breakdown of the German banking system, and the subsequent crash in England and later in the United States. But France, placing purely national interests ahead of all purely international considerations, and naturally hostile to any movement that might benefit Germany at her expense, insisted upon debating the legal technicalities of the measure with the American Government for two weeks, and when France finally did agree to the proposal, it was already too late to prevent the German crash and subsequent unfavorable developments.

The failure of the Hoover Moratorium to work the magic the markets had expected of it deepened the pessimism in financial quarters in the United States and shook further the confidence of the entire financial

world. When there followed the suspension of the gold standard in England, the great run on the gold supply of the United States, and the terrifying increase in the number of bank failures and the hoarding of currency, it became evident that more special measures were required to prevent the complete collapse of our banking system.

7. THE NATIONAL CREDIT CORPORATION

The first step taken was the creation on October 13, 1931, of the National Credit Corporation. This organization was by its very nature foredoomed to failure except in so far as it might have a good psychological effect in fostering the confidence of the people in their banks through the belief that at last something was being done to prevent bank failures. Under the plan of the National Credit Corporation the banks were mutually to help one another through the medium of associations, one or more of which was to be set up in each federal reserve district. The Corporation itself was authorized to make loans to individual banks, obtaining the funds for such loans from the sale of its own interest-bearing notes which it was authorized to issue up to the amount of \$1,000,000,000, each bank being asked to subscribe to these notes to the maximum amount of two per cent of its net demand and time deposits. A loan made to an individual bank was to be secured by the bank's own note supported by adequate collateral, and further secured by being made the joint liability of all member banks of its association. The grand total of \$1,000,000,000 in loans thus made legally available made it appear that substantial aid was in prospect for neccssitous banks.

Individual banks, however, hesitated to appeal for loans to their competitors, as was in effect required, and the associations, fearful of their joint liability, made loans sparingly. Moreover, the total amount of loans that could be made in any one district was limited by the amount of the total subscriptions of the banks in that district to the National Credit Corporation notes, or, at the maximum, two per cent of bank deposits in that section — a maximum too small to be effective in the case of particular districts unusually hard pressed by bank runs and frozen assets. The ineffectiveness of this device as a means of checking a bank panic involving a system with deposits in excess of \$50,000,000,000 is made quite obvious by the statement that the subscribers to the Credit Corporation's notes were called upon for a total of only \$135,000,000.

8. THE RECONSTRUCTION FINANCE CORPORATION

It must have been patent to the Administration that the National Credit Corporation was a device useless except as a temporary stimu-

lant to public confidence and that something more substantial would be required as an aid to the banks. At any rate, on January 22, 1932, the Reconstruction Finance Corporation was established, with powers much greater and broader than the powers of the ineffectual National Credit Corporation. The Reconstruction Finance Corporation was established, with a capital of \$500,000,000, entirely subscribed by the Government, and with authority to increase its total resources to \$2,000,000,000 by the sale of its bonds to the amount of \$1,500,000,000. It was a public, not a private organization. The management of the Corporation was vested in a board of directors consisting of the Secretary of the Treasury, the Governor of the Federal Reserve Board, and Farm Loan Commissioner, and four members to be appointed by the President of the United States. The Corporation was intended to make loans not only to banks but to building and loan associations, insurance companies, mortgage loan companies, credit unions, federal land banks, joint-stock land banks, federal intermediate credit banks, and livestock credit corporations. It was authorized also, with the approval of the Interstate Commerce Commission, to make loans to aid in the temporary financing of railroads when such railroads were unable to obtain funds upon reasonable terms through banking channels or from the general public. This powerful government corporation played a notable part in preventing the failure of various great banks and other corporations, notably railroads, and in bolstering public confidence, and was retained by the Roosevelt Administration as part of the administrative machinery of its New Deal. Despite its great resources and its liberality in making loans, as shown in Table XXXI, it was unable to prevent the further collapse of security prices, the continued suspension of large numbers of banks, and the ultimate collapse of the whole banking system. It should be noted that its total resources, while great, represented but little more than four per cent of the deposit liabilities of the banks, which at the time still stood in excess of \$45,000,000,000.

As indicated in the notes in the table itself, the powers of the Reconstruction Finance Corporation were increased by amendments, as were also the funds at its disposal. Concerning these amendments something more will be said in the next chapter.

9. THE GLASS-STEAGALL BILL OF 1932

Banking conditions in the United States improved somewhat after the Reconstruction Finance Corporation was established in January, 1932, and the Government undertook to bring about further improve-

TABLE XXXI. OPERATIONS OF THE RECONSTRUCTION FINANCE CORPORATION — AGGREGATE LOANS AND PREFERRED STOCK SUBSCRIPTIONS, FEBRUARY 2, 1932, TO JUNE 30, 1933, INCLUSIVE *

(In thousands of dollars)

Class	Authorized †	Disbursed	Repaid ‡	Outstanding on June 30, 1933
Under section 5 of the Reconstruction Finance Corporation Act, as amended:				
Banks and trust companies (including receivers)	\$ 1,395,057	1,158,957	473,429	985,528
Building and loan associations	115,431	109,072	26,773	82,299
Insurance companies	97,813	83,817	9,895	73,922
Mortgage loan companies	100,150	170,274	20,368	155,907
Credit unions	607	563	16	549
Federal land banks	30,500	21,800	190	21,800
Joint-stock land banks	17,394	7,945	9,250	7,755
Federal intermediate credit banks	9,250	9,250	2,185	2,138
Federal agricultural credit corporations	4,789	4,324	11,556	107,350
Regional agricultural credit corporations	123,394	118,006	7,871	4,384
Agricultural credit corporations	13,789	13,256	20,544	359,184
Livestock credit corporations	407,839	379,728		
Railroads (including receivers)			582,078	1,500,817
Total, section 5 of the Reconstruction Finance Corporation Act, as amended	2,406,210	2,082,895		
Under the Emergency Relief and Construction Act of 1932, as amended:				
Self-liquidating projects, section 210 (a), title II (including loans for financing repair or reconstruction of buildings damaged by earthquake, fire, tornado, or cyclone in 1933)	230,900	30,176	37	30,139
Financing of agricultural commodities and livestock, section 201 (d), title II	58,010	3,679	931	2,719
Amounts made available for relief and work relief, section 1, title I	300,000	298,540	466	298,074
Total, Emergency Relief and Construction Act of 1932, as amended	588,910	332,396	1,434	330,961
Under section 304, title III, of the Bank Conservation Act, as amended:				
Loans on preferred stock of banks	12,185	12,185		12,185
Subscriptions for preferred stock of banks	35,033	31,083		31,083
Purchases of capital notes and debentures of banks	200	200		200
Total, section 304, title III of the Bank Conservation Act, as amended	47,418	43,468		43,468
Grand total . . . . .	|| 3,040,544	2,458,758	583,512	1,875,246

*Federal Reserve Bulletin, September, 1933, p. 538

† The Corporation had outstanding on June 30, 1933, agreements to lend or to subscribe to preferred stock, upon the performance of specified conditions, an aggregate amount of \$274,494,035.

‡ Exclusive of repayments unallocated, pending advice, as of June 30, 1933.

§ Includes \$160,998,570 authorized to aid in the reorganization or liquidation of closed banks.

|| Includes loans authorized which were subsequently withdrawn or canceled aggregating \$246,511,097, of which \$165,849,270 was for banks and trust companies.

ment by the speedy enactment of the Glass-Steagall Bill, which became law on February 24, 1932. While this was almost purely a piece of emergency legislation, its provisions may be of lasting interest through their effect on more permanent legislation, and they deserve, therefore, careful consideration. The two purposes of the bill were to permit the reserve banks to make loans more freely to member banks in some cases than the Federal Reserve Act as it then stood permitted, and to strengthen the position of the reserve banks so that they could more readily and with less strain meet an external drain of gold and a further demand for currency by the American public.

Many member banks, as a result of the loss of deposits through gradual withdrawals or through runs, were faced with the necessity either of disposing of bonds and other investments at ruinous prices in a demoralized market or of closing their doors. These banks had exhausted their excess cash reserves and had rediscounted with the reserve banks all their eligible paper and pledged for loans all their government bonds, and could obtain loans from no other sources. To provide temporary relief for such banks in an unusual banking situation, the Glass-Steagall Bill permitted them under certain conditions to obtain further advances from the federal reserve banks on their promissory notes. These notes had to be secured, not by eligible commercial paper or government bonds in accordance with the regular provisions of the Federal Reserve Act, but they had to be secured to the satisfaction of the federal reserve bank extending the loan and approved by at least five members of the Federal Reserve Board. This provision of the act was to remain in force for only one year. It was the expectation that this temporary loosening of the restrictions on loans to member banks would not only help necessitous member banks directly, but would also indirectly be of assistance to non-member banks whose city correspondent banks would be more willing to extend aid to them if in case of need they themselves might obtain such special accommodation at the reserve banks. The total amount of loans authorized by the reserve banks under this amendment to the Federal Reserve Act was smaller than might have been expected, namely, \$33,012,000, to the end of the year 1932.

A closely related provision of the act, without the time limit of one year, permits a reserve bank to make advances, upon such security as just described, to a group of its member banks for distribution to such banks within the group as need assistance. No advances were made under this provision of the law in 1932. It would appear from these facts that these provisions of the Glass-Steagall Act for loans to member

banks not secured in the regular way, were of no great practical importance for the banking system as a whole, although probably of great importance to the fifty banks that made use of them in 1932.

These provisions for special loans were not made necessary at the time by a shortage of paper eligible for rediscount held by the member banks in the aggregate. There was no such general shortage. On the contrary, at the end of December, 1931, the member banks held \$2,573,000,000 of eligible paper in addition to \$1,694,000,000 of government securities not pledged as collateral for national bank notes, or a total of nearly \$7,300,000,000. This amount was almost ten times as great as the total borrowings of the member banks at the reserve banks at the time. Moreover, these eligible assets and government securities were fairly well distributed among the member banks of the country, so that the number unable to borrow at the reserve banks under the regular provisions of the Federal Reserve Act was comparatively small. Despite these facts, which should have been well known, there seems to have been a widespread impression that the banks in general were unable to obtain accommodation at the reserve banks for lack of eligible assets and that this legislation was required to loosen up credit.

At this stage of the depression as well as later, tightness of credit and inability of borrowers to obtain loans were not primarily the result of lack of capacity of the banks to make loans to their customers or inability of the banks to obtain advances from the reserve banks, but rather the inability of would-be borrowers to give to the banks adequate security, and a desire on the part of the banks to maintain a high degree of liquidity for fear of persistent withdrawal of deposits by frightened depositors, or a loss of reserves through unfavorable balances at the clearing-house or at the federal reserve banks as the result of a contraction of credit by other banks in the system.

We come now to the second and more important of the two purposes of the Glass-Steagall Bill. This was to give the federal reserve banks greater freedom in the use of their excess gold reserves in the event of a foreign run on our gold supply or an increase in the internal demand for currency for hoarding. This purpose was accomplished by authorizing the federal reserve banks until March 3, 1933, upon the affirmative vote of not less than a majority of the Federal Reserve Board, to include United States government bonds as a part of the collateral against federal reserve notes. In order for one to understand the real significance of this provision of the law, it is necessary to have in mind the requirements of the reserve banks under the Federal Reserve Act and to grasp clearly the distinction between what has been termed "free gold" and

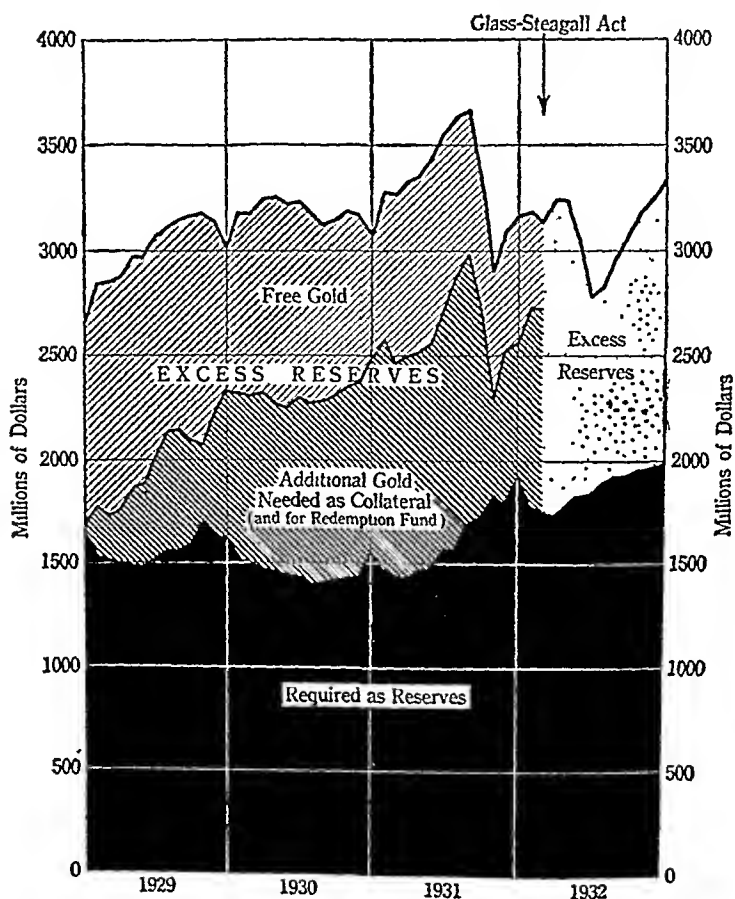


CHART XIV. RESERVES OF FEDERAL RESERVE BANKS

Figures are for last Wednesday in each month
 From *Annual Report of the Federal Reserve Board*, 1932, p. 17.

excess reserves of the reserve banks. On this subject we can do no better than to present the following quotation from the *Federal Reserve Bulletin* of March, 1932, which explains the meaning of the law clearly and concisely:

Under the terms of the Federal Reserve Act the federal reserve banks must maintain a 35 per cent reserve in gold or lawful money against their deposit liabilities and a reserve of 40 per cent in gold against their notes. On February 24, for instance, the reserves of the federal reserve banks were \$3,140,000,000; federal reserve notes in actual circulation were \$2,643,000,000, and deposits

\$1,973,000,000. The 35 per cent reserve against deposits would be \$691,000,000, which would absorb all of the \$202,000,000 of reserves other than gold and in addition \$489,000,000 of gold, and the 40 per cent reserve against federal reserve notes would be \$1,057,000,000, so that the total reserve requirements would be \$1,748,000,000, and excess reserves \$1,392,000,000. This figure represents the total amount of gold on which the Federal Reserve System could base additional credit. On the basis of these excess reserves, the federal reserve banks could issue \$3,500,000,000 of credit, if the demand were for currency, and \$4,000,000,000 if it were for deposits at the reserve banks. There is nothing in the new legislation that in any way changes these maximum amounts. It does, however, have an important bearing on the manner in which the extension of credit can be accomplished under the law.

Separately from the provisions prescribing reserve requirements, described above, the Federal Reserve Act provides that the federal reserve agent must hold 100 per cent collateral against all the federal reserve notes issued by him to the federal reserve bank and that this collateral must consist of gold or gold certificates or of eligible paper in the form of discounts or acceptances purchased in the open market. This provision relates to the total of federal reserve notes issued by the federal reserve agents, and not merely to the notes that are in actual circulation against which the 40 per cent reserve is required. The difference between the two figures on February 24 was \$266,000,000, representing federal reserve notes held in the vaults of the issuing banks for the purpose of meeting their over-the-counter requirements. The figure against which collateral must be held, therefore, was \$2,908,000,000 as compared with \$2,643,000,000 of notes in actual circulation. It should be observed that the gold held as collateral against federal reserve notes outstanding also constitutes a part of the federal reserve bank's reserves, but can be counted as reserves only against federal reserve notes in actual circulation and not against deposits.

In providing for the collateral with the federal reserve agent, the federal reserve banks are in the habit of turning over to him practically all of the eligible paper that they have, which on February 24 amounted to \$921,000,000. Deducting this from the total amount of federal reserve notes issued by the agent leaves about \$2,000,000,000 of notes that had to be covered by gold in order to make up the 100 per cent collateral. This gold, to be sure, counts as reserves against federal reserve notes, and since it is considerably larger than the 40 per cent reserve required, the reserve against federal reserve notes does not enter separately into the calculation of free gold. In addition to the gold that must be held as collateral against notes there is the 35 per cent reserve required against deposits and also an amount of not less than 5 per cent of notes not covered by gold, that must be held in a redemption fund in the Treasury of the United States. Since on the date of this calculation \$921,000,000 of federal reserve notes were covered by eligible paper, the redemption fund required on that date was about \$46,000,000.

To sum up, therefore, the calculation of free gold involves the deduction from the total reserves of \$3,140,000,000, first, of \$1,987,000,000 of gold required as collateral; second, of \$691,000,000 required as reserves against deposits; and third, of \$46,000,000 required for the redemption fund, leaving \$416,000,000 of gold that was entirely free on February 24, not being required either as reserves or as collateral.

Free gold, as defined in the preceding paragraph, does not limit the amount of advances that the federal reserve banks can make to member banks in the form of discounts, because the paper arising from such advances is eligible as collateral for federal reserve notes, and these advances, therefore, make no inroads on the free gold. Neither does it limit the amount of gold that can be exported, because a demand for gold for export, by causing member banks to borrow from the federal reserve bank in order to obtain it, serves to increase reserve bank holdings of bills discounted and thus results in the creation of the collateral necessary to replace the gold that has been withdrawn.

The free gold does, however, limit the extent to which the reserve banks by open-market operations can enable the member banks to meet an external drain of gold or an internal demand for currency without increasing their indebtedness at the reserve banks. When the member banks have to borrow in order to obtain gold or currency, this borrowing becomes an element of tightness in the credit situation, which in existing circumstances would be undesirable because it would make the banks more reluctant to extend loans to their customers. It is true that if acceptances were sold to the reserve banks for the purpose of obtaining currency or gold, there would be no inroad on the free gold, because acceptances as well as discounts are eligible as collateral for federal reserve notes. Acceptances, however, are not always available in sufficient amounts and for this reason cannot be depended upon by the member banks as an adequate basis for obtaining credit from the federal reserve banks.

Prior to the enactment of the recent amendments, therefore, a gold drain from abroad, or a further currency demand from the American public, could be met by the federal reserve banks through the purchase of government securities only within the limits of the free gold, because to meet the demand through the purchase of government securities, which have not been eligible as collateral, would not produce the collateral necessary against federal reserve notes, and gold would have to be used for the purpose. It is in view of this situation, which might have resulted in an increase of the burden of indebtedness of the member banks at a time when it is desirable to increase the ability of member banks to serve their communities, that the new bill has authorized the Federal Reserve Board until March 3, 1933, to permit the use of government securities as collateral against federal reserve notes. This authority makes it possible for the reserve banks to meet any drain within the limits of their excess gold reserves without the member banks having to incur an additional burden of indebtedness.

Until recent months, collateral requirements were not an important element in the situation, but recently many factors have combined to reduce the amount of free gold. Among these factors are a considerable volume of security holdings by the federal reserve banks, a relatively low volume of the banks' acceptance holdings, a growth in federal reserve notes outstanding, caused not by a demand for currency for business purposes but for hoarding, and a large volume of gold exports. In these circumstances the enactment of legislation that enables the federal reserve system to pursue a policy based on the assurance that in case of need not merely its "free gold" will be available, but practically its entire gold reserve in excess of legal requirements, has resulted in strengthening the entire credit structure of the country and in increasing the system's power to co-operate in the recovery of business.

10. RESULTS ACHIEVED UNDER THE GLASS-STEAGALL ACT

The reserve banks, having been authorized to include government bonds as collateral for federal reserve notes issued, entered the open market and bought such securities on a large scale. Their total holdings of government obligations rose from \$741,000,000 on February 24, 1932, to \$1,851,000,000 on August 10, and held at about this level to

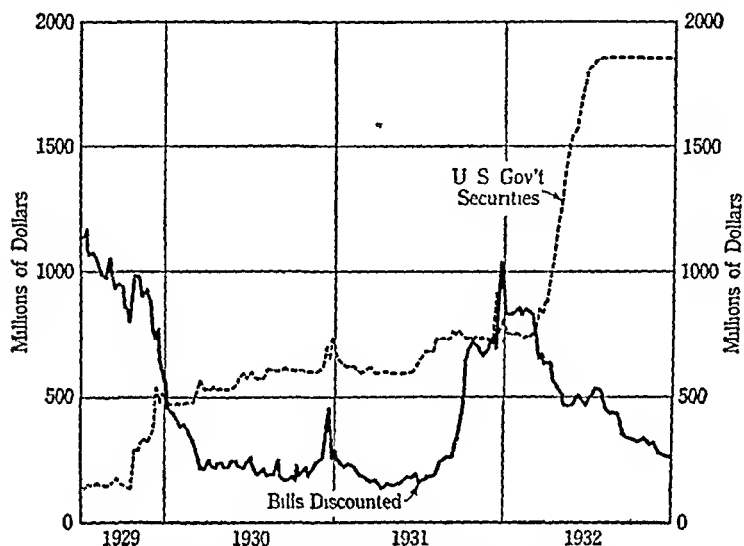


CHART XV. FEDERAL RESERVE BANKS
(Holdings of U.S. Government Securities and Bills Discounted)
From Annual Report of the Federal Reserve Board, 1932, p. 11.

the end of the year. Payment for these bonds was made in the form of federal reserve notes or deposit credit at the reserve banks. The consequent expansion of the reserve note and deposit liability of the reserve banks was amply covered by their excess reserves which would have permitted a considerably greater expansion of federal reserve bank credit.

These open-market operations of the reserve banks not only reduced the credit strain resulting from a renewed outflow of gold and further hoarding of currency, but, by increasing the excess reserves of the member banks while reducing their indebtedness at the reserve banks, encouraged a more liberal credit policy of the member banks. Whatever hopes may have been entertained, however, that larger excess reserves would impel the member banks to reduce interest rates to their customers and to expand their loans and investments, other than invest-

ments in government bonds, were blasted by the actual course of events. The disappointing results are shown clearly in Table XXXII and Chart XVI. From January to June loans and investments of all member banks in the aggregate declined, and again from July to December, and while loans and investments of member banks in New York City increased during the second half of the year, the increase was represented

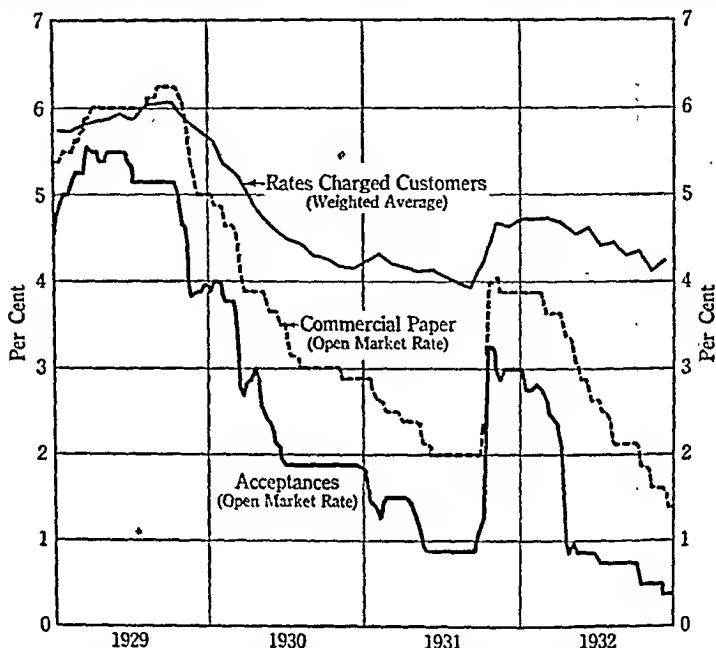


CHART XVI. MONEY RATES IN NEW YORK CITY

Rates charged customers — weighted average, monthly basis; commercial paper — weekly averages of daily rates on 4-6 months' paper; acceptances — weekly averages of daily rates on 90-day bankers' acceptances.

From *Annual Report of the Federal Reserve Board, 1932*, p. 15.

almost wholly by an increase in government securities. Loans to customers, both of member banks in New York City and of other member banks, declined both in the first half of the year and in the second half of the year. In respect to interest rates, the rates charged to customers by New York City banks declined but little during 1932, and the rates charged to customers in other sections of the country declined even less. The rates that declined sharply were the open-market rates on commercial paper and bankers' acceptances, and the yield on government securities, all of which declined to ridiculously low levels. Not shown in the chart is the yield on United States treasury notes and certificates

which in late August had fallen to the unbelievable figure of 0.06 per cent.

These results, while disappointing, need not have been surprising. The banks had a surfeit of funds which they were willing to lend or invest at any rate above zero if they could get no more, provided only that the funds could be so placed that they would be safe and available upon short notice. On the other hand, they were unwilling to invest in securities other than government bonds in a falling market, or to lend to necessitous borrowers without adequate collateral, or to place their funds so that they would not be available in case of a sudden large demand for cash. The banks had, in fact, at last learned to apply sound commercial banking principles, and they were busily engaged in double-locking the stable doors after most of their horses had been stolen; and, if we may carry this figure of speech a bit farther, they were in danger of suffocating the horses they had left by locking their stable doors too tightly and chinking up all the cracks in the walls. They were, in fact, playing too safe for safety.

TABLE XXXII. ALL MEMBER BANKS — LOANS AND INVESTMENTS *
(In millions of dollars)

	Dec 31, 1932		Changes during 1932			
	Member banks in New York City	All other member banks	Member banks in New York City		All other member banks	
			January-June	July-December	January-June	July-December
Loans and investments...	7,327	20,142	- 745	+ 612	- 1,829	- 1,143
Loans	3,538	11,666	- 1,082	- 143	- 1,592	- 1,240
Loans to banks	216	228	- 114	- 44	- 103	- 85
Loans to other customers	2,621	11,283	- 838	- 235	- 1,465	- 1,127
Open-market loans	701	154	- 130	+ 136	- 24	- 28
Investments	3,789	8,476	+ 336	+ 756	- 238	+ 96
United States Government securities	2,603	3,937	+ 240	+ 595	+ 68	+ 317
Other securities	1,186	4,540	+ 97	+ 161	- 307	- 221

* Annual Report of the Federal Reserve Board, 1932, p. 6.

11. PROVISION FOR EXPANSION OF NATIONAL BANK NOTE ISSUE

A further provision for expansion of bank credit by means of additional issues of bank notes was represented by the Glass-Borah amendment to the Federal Home Loan Bank Act of July 22, 1932. This provision of the law extended to all bonds of the United States bearing interest at a rate not in excess of three and three eighths per cent, for a period of three years, the circulation privilege previously possessed only by certain issues of two per cent bonds. On June 30, 1932, there were outstanding \$675,000,000 of two per cent bonds having the circulation

privilege, all of which had been callable since April, 1930. The additional bonds to which the Act of July 22 extended this privilege amounted at the time to about \$3,000,000,000. This did not mean, however, that the national banks could or would proceed to issue \$3,000,000,000 of additional bank notes. Under the law the banks could not issue notes in excess of the amount of their paid-in capital, and their paid-in capital on June 30, 1932, was only \$1,570,000,000. Since the banks had already \$670,000,000 of notes outstanding, the additional issue permitted by the amendment was only \$900,000,000. The note-issue privilege extended by this act was utilized only to a limited extent during 1932 owing to the fact that the banks had a considerable amount of excess reserves and did not require such note issues as a condition of expanding their own loans. Moreover, there was little profit to be realized in issuing such notes, for reasons discussed in an earlier chapter.

The failure of credit expansion to follow the amendments made in the law permitting the issue of federal reserve notes based on government bonds as collateral and the expansion of the national bank note circulation should not blind one to the danger of unlimited inflation that lies in such devices if they should be made permanent features of our banking system. Should such possibilities of expansion lie open before the banks during a period of rising prices and growing demands for loans, they would be used to the utmost and with most disastrous results.

12. THE ABORTIVE BUSINESS REVIVAL OF 1932

For a time in the summer and early autumn of 1932, it seemed that the Government had conquered the depression and with the aid of its succession of extraordinary financial measures had saved the banking system of the country from collapse. There seemed to be reason for at least a tempered optimism. The Federal Reserve Board index of industrial production, adjusted for seasonal variation, rose from a low of 58 in July to 66 in September; factory employment and car loadings increased; security prices rose emphatically, and bank suspensions declined in number.

Various other favorable factors were cited in the "Review of the Month" in the *Federal Reserve Bulletin* of October, 1932. The second run on the country's gold supply, which had drained off \$435,000,000 in the month of May and the first half of June, had come to an end after having been successfully met (with the aid of the Glass-Steagall Act), and between June 15 and the end of September, \$275,000,000 had been added to the country's stock of monetary gold, bringing the total gold

stock back to \$4,200,000,000, and the excess reserves of the reserve banks up to \$1,200,000,000. From July 20 to October, there had been a release of currency from hoarding estimated at \$250,000,000. The inflow of funds to the member banks from various sources (including, of course, the open-market operations under the Glass-Steagall Act) had enabled them to reduce their indebtedness to the reserve banks to the lowest level since September, 1931, and at the same time to increase their excess reserves to approximately \$400,000,000. Not only this, but from the middle of July to the end of September there had been an upturn in total loans and investments of the member banks in leading cities amounting to \$575,000,000, or three per cent, this last implying an increase in confidence of the banks in the investment market and a greater willingness to make loans as well as a greater demand for loans by eligible borrowers — all this indicating a rise in business activity and a growth in confidence. Unfortunately, this "Review of the Month" had to point out that the increase in total loans and investments of the member banks had been mainly in the form of holdings of United States securities throughout the country, offset in part by a continued decline in loans by banks outside New York City. Except for the last qualifying statement the brief review of the month might have been considered extremely reassuring. But this statement indicated that the banks by and large were still in the race for liquidity and that the bankers peering through the financial fog could not yet see the road to prosperity clearly ahead.

Just when the growing stock market boom was leading many persons to believe that prosperity must at last be just around the corner, where it had been repeatedly announced by optimistic forecasters only to vanish always into the foggy distance, a succession of shocks shattered what confidence there was left and at last brought down the banking system in ruins.

13. THE FINAL COLLAPSE OF THE BANKING SYSTEM

Suspicion having been aroused that the Administration was favoring certain large institutions through Reconstruction Finance Corporation loans, the Clerk of the House was induced to make public the names of all the borrowers. Quite naturally, when the names of the borrowing banks were made public, runs developed on some of them, because the fact that they had appealed for government loans was evidence that they were having difficulties in meeting their obligations. Partly as a consequence of this unfortunate development, bank failures began once more to increase in numbers, amounting to 102 in October as

against 67 in September. About the same time the Maine election, foreshadowing a national Democratic victory, inspired fear in quarters which had always associated Democratic rule with financial calamity and which had up to that moment apparently been reckoning on a continuation of Republican rule. The stock market, which had given premonitory shivers in September, hastened on its downward course, carrying with it the bond market and the hopes of many banks and some insurance companies whose frozen assets had just begun to show some signs of thawing out. To make matters worse, the national political campaign in its later stages became extremely bitter and wound up with the "campaign of fear" by Republican leaders, which tended to increase the number of those who became panic-stricken at the prospect of a Democratic victory in the Presidential contest.

Now came the period of the "bank holidays." When the first of these holidays was declared by the Lieutenant-Governor of Nevada on October 31, 1932, the full significance of the event was not realized any more than the significance of the failure of the Austrian Credit-Anstalt had been realized in May, 1931. To the people of the East it did not seem a particularly important fact that a dozen banks in the desert, with deposits of \$17,000,000, were in difficulty and could not meet their obligations without reorganization, and that the acting Governor of Nevada had chosen to aid them temporarily by the novel expedient of declaring a twelve-day bank holiday. But when the two weeks expired and the banks were favored with an extension of the moratorium, and then with a still further extension, while depositors waited in vain for their money, uneasiness grew in neighboring States and in certain other sections of the country, and depositors began to withdraw funds on a large scale for fear of being likewise caught by a moratorium. Quite as might have been expected, the runs on banks induced by fears of a moratorium quickly produced the need for a moratorium.

At first the banking holidays declared in the East and Middle West were local affairs, such as those in a few cities of Illinois and Iowa. The first state-wide action was that of Iowa, where the legislature on January 20, 1933, authorized the State Superintendent of Banking to operate any bank without placing it in receivership. This was, in effect, a moratorium. New deposits received after a bank was taken over by the State were to be segregated from old deposits and could be withdrawn at any time in full. But old deposits were placed on a restricted basis and only a small percentage could be withdrawn at a time. The next blow to confidence came from Louisiana, where Governor Long on February 3, was obliged to declare a holiday for at least a day to save

the Hibernia Trust Company of New Orleans, one of the outstanding banks of the South.

Fear of a spread of the banking holiday movement now hastened withdrawals of funds from banks in all sections of the country. Banks in the interior withdrew funds on deposit with the strong banks of New York City, and the latter turned for help to the Federal Reserve Bank of New York, confident that their own great quantities of liquid assets and their borrowing power at the Reserve Bank would pull them through. But on February 14, 1933, the country was startled by the news that the Governor of Michigan had declared a state-wide bank holiday as the result of an acute financial emergency in the city of Detroit in particular and the whole state in general. The situation in Detroit had become particularly acute because of the excessive amount of funds some of the great banks had tied up in real estate speculation. The final crash was now inevitable and near. Withdrawal of deposits and hoarding of currency increased rapidly, and the strain on banks in all parts of the country became too great to be withstood. On February 25 a bank holiday was declared in Maryland and similar action was taken within a few days in other States. The State of New York held out a few days longer, but in the early morning of inauguration day, March 4, 1933, Governor Lehman fell in line by declaring a two-day bank holiday in New York. Similar action was taken by practically all other states which had not already acted. On President Roosevelt's inauguration day, practically all the banks in the country were closed.

14. THE FEDERAL RESERVE BANKS AND THE CRISIS

The question may well be raised, Could not the federal reserve banks have come to the aid of the member banks and provided them with such prodigious quantities of currency and credit as to have permitted them to withstand any conceivable demand for funds on the part of their depositors? The answer to this question is that the reserve banks might have been able to do this if the member banks had been in a fundamentally sound condition with liquid assets equal to a substantial proportion of their demand liabilities and with only such a small proportion of their assets hopelessly poor that it would have been amply covered by the paid-in capital and surplus of the banks. Consider first what the reserve banks actually did do to help the member banks meet the crisis.

Between February 15 and March 4 — that is, from the day following the Michigan bank holiday declaration to inauguration day — depositors demanded from the member banks currency to the amount of \$1,-

630,000,000, including \$300,000,000 in gold coin and gold certificates. Member banks in New York City at the beginning of February had held a large amount of excess reserves with the reserve banks, and carried also large deposit balances for banks in the interior. The interior banks, in meeting demands made upon them by their customers, drew on their balances with their New York correspondent banks to the amount of approximately \$750,000,000. At the same time the New York member banks were compelled to meet withdrawals of deposits by their local customers in New York. In meeting these demands for funds the New York banks drew on their reserve balances at the reserve bank to the amount of \$307,000,000 and borrowed in addition \$664,000,000 at the Federal Reserve Bank of New York. The Federal Reserve Bank of New York, in addition, poured \$385,000,000 into the market through open-market operations, mainly through the purchases of acceptances in New York. The New York Federal Reserve Bank alone, then, in a little over two weeks advanced to member banks funds in excess of \$1,000,000,000 over and above the amount of the excess reserves the New York member banks had held at the beginning of the period. The twelve reserve banks combined during this period advanced to member banks through discount operations \$1,170,000,000, and in addition poured into the open market \$460,000,000, a grand total of \$1,630,000,000. This was certainly a considerable pouring-out of reserve bank funds.

Since the demands of the member banks upon the reserve banks represented primarily a demand for ready cash to meet the insistent demand for cash of their customers, a substantial proportion of the advances made by the reserve banks, whether directly in loans to member banks or in the form of open-market operations, was in the form of federal reserve notes, except as to the amount of \$300,000,000 which was actually paid out in gold and gold certificates. At the same time some \$300,000,000 of cash reserves were lost to the reserve banks as the result of net exports of gold.

As a result of these operations the total cash reserves of the reserve banks declined from \$3,457,000,000 on February 1, to \$2,802,000,000 on March 4, a decline of \$655,000,000; federal reserve notes outstanding increased from \$2,730,000,000 to \$4,165,000,000, an increase of \$1,435,000,000; federal reserve deposits declined from \$2,540,000,000 to \$2,053,000,000, a decline of \$487,000,000, this decline representing in large measure a withdrawal of excess reserves by member banks; and the reserve ratio of the twelve federal reserve banks combined fell from 65.6 per cent to 45.1 per cent. The net result of these various changes

in the currency situation was an increase in the total amount of money in circulation (and in hoards) from \$5,652,000,000, already almost a record-breaking figure, to \$7,485,000,000 on March 5, the highest figure ever reached up to that date, but surpassed by the figure for March 8, when the amount of \$7,538,000,000 was reached.

While the federal reserve banks had thus met internal and external demands, mainly in the form of cash, to the amount of approximately \$2,000,000,000 in less than five weeks, they had by no means reached the end of their resources. On March 4 they still held excess reserves of \$416,000,000, mainly in gold, on the basis of which they could have extended additional credit to member banks in the form of federal reserve notes and deposit credit to the amount of approximately \$1,000,000,000. Moreover, they had the legal right to continue expansion after the reserve ratio fell below the ordinary legal limits of 35 per cent for deposits and 40 per cent for reserve notes — such expansion having been expressly provided for by the original Federal Reserve Act, as previously discussed.

But this additional expansion of federal reserve bank credit as an aid to the hard-pressed member banks was out of the question, for the reason that those member banks most in need of help could not meet the conditions laid down by the law. They had exhausted their eligible commercial paper, pledged their available government bonds, and could not qualify for further loans even under the more liberal provisions of the Glass-Steagall Act of 1932.

When the Federal Reserve Act was passed, the thought was that the powers of the reserve banks were made ample to permit them to supply the country with any quantity of federal reserve notes that might conceivably be required to meet a currency panic, and these powers, great to begin with, were increased by later amendments as already described. But there had been left out of consideration the possibility that the member banks might be unable in time of crisis to offer adequate security for all the advances which the reserve banks might be able to make. Consider the consequences if the reserve banks had continued to meet all the demands of their member banks until the member banks had satisfied the insatiable demand for cash on the part of their depositors. It is conceivable that practically the total amount of \$25,000,000,000 of member bank deposits of February, 1933, would have been converted into federal reserve notes, thereby reducing the reserve ratio of the reserve banks to something like 10 per cent. The member banks would then have been out of debt to their depositors, whose claims would have been transformed from deposits in the member

banks into federal reserve notes, or claims payable in gold or lawful money by the reserve banks. To meet such payments the reserve banks would have held mainly the promissory notes of the member banks secured by collateral largely in the form of frozen assets—including defaulted foreign bonds, real estate mortgages, and skyscraper bank buildings, gilded and tiled. Prompt redemption of the federal reserve notes would, of course, have been just as impossible as prompt payment of the bank deposits had actually proved to be, and the ultimate redemption of the notes would never have become possible except by "reflation" or a general rise in prices increasing greatly the market value of collateral pledged by the member banks. The results would have been different, of course, if the currency panic had occurred at a time when the assets of the banks were sounder and more liquid. In that case the reserve banks could more safely have exchanged their promises to pay in the form of reserve notes for the assets of the member banks, and the chances of ultimate redemption of the reserve notes in standard gold dollars at par would have been better.

The more canny depositors who were withdrawing bank deposits in panic suspected something of this sort, and demanded, not merely reserve notes which might become as worthless as the deposits in a closed bank, but gold, and hauled it home in their pockets, in suitcases, or in trucks, in accordance with their respective means and degree of fright. One is moved to remark that the results might have been much better, both for these hoarders and for the country, if they had been more canny and less panic-stricken, and had invested their bank deposits at the time in common stocks of the premier American corporations, such as United States Steel Corporation, American Can, or General Electric. They would thus have been protecting themselves quite as effectively against closing of the banks, depreciation of the currency, and ultimate inflation, as by withdrawing and hoarding gold, and instead of contributing to the destruction of the banking system they would have been supporting the security markets.

CHAPTER XXVIII

RECONSTRUCTION AND REFORM

1. THE NATIONAL BANKING HOLIDAY

IN RESPECT to banking, the Roosevelt Administration on inauguration day faced a double problem. First, it had, in some way, to set the demoralized banking system in running order, so that people could once more go about the ordinary affairs of life. Second, it had to devise some fundamental reforms in the banking system so that a repetition of the disaster which had befallen the country might, if possible, be avoided in the future. In a short while the Administration was compelled to consider also important changes in the monetary system. These problems of reconstruction and reform will be considered in this and the following chapter.

Immediately after his inauguration, President Roosevelt acted with a promptness, resourcefulness, and vigor that inspired confidence and restored some degree of order out of the chaos into which the banking institutions had fallen. Taking advantage of an almost forgotten war measure, passed in October, 1917, conferring broad powers over banking and currency upon the President of the United States, he proclaimed a four-day national banking holiday, from March 6 to 9, inclusive. During this period all banking institutions were forbidden to pay out any gold or silver or to take any action which might facilitate the hoarding thereof; they were forbidden also to pay out deposits, make loans or discounts, deal in foreign exchange, or transfer credits from the United States to any place abroad, or to transact any banking business whatsoever, except as expressly provided.

This proclamation gave the Administration a brief period in which to find a solution for the most pressing problem of giving the country some sort of working banking system. Temporarily the banking holiday prevented the further dissipation of the reserves both of the member banks and the federal reserve banks and the loss of enormous quantities of the country's monetary gold stocks through export to foreign financial centers. How rapidly the gold reserves were being depleted before this proclamation was issued is indicated by the fact that the combined effect of the increase in gold in circulation (hoarded) and the export of gold had reduced the total stock of gold in the reserve banks and the Treasury from \$3,477,000,000 on February 1 to \$2,853,-

000,000 on March 4, a decline of \$624,000,000, or 18 per cent. Moreover, the run on the gold reserves, both domestic and foreign, was increasing in intensity and within a few weeks the gold reserves would probably have been completely exhausted.

2. THE EMERGENCY BANKING ACT OF MARCH 9, 1933

On March 9, the last day of the banking holiday, the President sent a special message to Congress asking for immediate enactment of legislation giving to the executive branch of the Government control over banks for the protection of deposits and authority to open as rapidly as possible banks found to be in good condition and to reorganize unsound banks and put them in sound condition. The message asked Congress also for legislation to provide for such additional currency as might be required to meet all demands.

With extraordinary speed the required legislation was provided in the form of the Emergency Banking Act of March 9, 1933, the most significant provisions of which will be briefly considered under the five *Titles* of the act.

Title I (Dealing with Emergency Powers)

Title I, in addition to approving and confirming the action already taken by the President under the wartime measure of October, 1917, concerning the legality of which some doubt had arisen, by amendment of that measure conferred the following powers upon the President:

1. The President in time of national emergency may regulate or prohibit any transactions in foreign exchange, transfers or payments between banking institutions, and the export, hoarding, melting, or earmarking of gold or silver coin or bullion. Violation of the President's order is punishable by a fine of not more than \$10,000, or imprisonment for not more than ten years, or both.

2. Whenever in his judgment such action is necessary to protect the currency system of the country, the Secretary of the Treasury may require that all privately owned gold coin and bullion and gold certificates be delivered to the Treasurer of the United States in exchange for an equivalent amount of any other form of money issued under the laws of the United States. Penalty for violation, a fine equal to twice the amount of gold withheld.

3. During such emergency period as the President shall prescribe, no member bank of the Federal Reserve System shall transact any banking business except to such extent and subject to such regulations as may be prescribed by the Secretary of the Treasury with the approval of the

President. Penalty for violation, a fine of not more than \$10,000 and imprisonment for not more than ten years.

Title II: Bank Conservation Act

Under Title II, cited in the law as the "Bank Conservation Act," provision was made for the reopening and operation on a restricted basis of certain national banks which under the regular provisions of the law would have been placed in receivership and liquidated. Under this Title the Comptroller of the Currency, whenever he might deem it necessary in order to conserve the assets of the bank for the benefit of creditors, might appoint a "conservator" for such bank, who, placed under bond, would take possession of the books, records, and assets of the bank, and take such action as necessary to conserve the assets pending further disposition of its business as provided by law. If, upon examination of the affairs of the bank, the Comptroller of the Currency should become satisfied that it might be done safely and in the public interest, he might terminate the conservatorship and permit the bank to resume its business subject to such terms and restrictions as he might prescribe. During the period of conservatorship the Comptroller might require the conservator to set aside and make available for creditors on a ratable basis such amounts as might safely be used for this purpose, and he might permit the conservator to receive new deposits. The new deposits were not to be subject to restriction on withdrawal and were to be segregated from other assets of the bank, and either kept on hand in cash, or invested in direct obligations of the United States, or deposited with a federal reserve bank.

This Title of the law also made provision for the reorganization of national banks and the resumption of business by them on an unrestricted basis. In general, the purpose of this Title was to permit banks with impaired assets to operate on as broad a basis and with as little inconvenience to the public as was consistent with the protection of their creditors, and to avoid when possible the complete liquidation of the assets and the permanent closing of the bank.

Title III (Providing for Preferred Bank Stock)

Under Title III any national bank, with the approval of a majority of the shareholders, might issue preferred stock of amount and par value approved by the Comptroller of the Currency, such preferred stock to be entitled to cumulative dividends up to six per cent per annum, to have such voting and other rights as might be approved by the Comptroller of the Currency, and not to be subject to the double liability

which has commonly been provided for common stocks of banks. The Secretary of the Treasury, with the approval of the President, might request the Reconstruction Finance Corporation to subscribe to, or make loans upon, such preferred stocks of national banks, and to subscribe to preferred stocks of state banks when such preferred stock was not subject to double liability. Where preferred stock of state banks and trust companies was not made exempt from double liability, the Reconstruction Finance Corporation might purchase capital notes or debentures of such institutions.

These preferred stock provisions were for the purpose of supplying additional capital funds for banks with impaired assets. It was assumed that private capital would more easily be found for this purpose if it could be given a prior claim on income and be freed from liability to assessment. Moreover, the law opened the way for the R.F.C. to contribute capital to weak banks without assuming a liability of loss greater than the amount of capital advanced. The R.F.C. was authorized to increase its outstanding obligations by an amount sufficient to carry out the provisions of this section.

Title IV (Dealing with Federal Reserve Bank Notes and Loans)

Title IV made provision for the issue of additional federal reserve bank notes, which under this act might be issued by the federal reserve banks on the pledge of United States government securities, and notes, drafts, bills of exchange, or bankers' acceptances acquired under the provisions of the Federal Reserve Act. This permitted practically unlimited expansion of the currency through the issue of federal reserve bank notes, which were not limited in amount, as were the federal reserve notes, by a 40 per cent gold reserve. Armed with this power of unlimited issue of notes, the reserve banks could meet any demands for currency that might be made upon them, so long as they could meet the requirements of the law in respect to collateral. The amount of notes issued might be equal to 100 per cent of the face value of government securities pledged, and 90 per cent of the estimated value of other security — that is, notes, drafts, etc.

Title IV also extended for one year, to March 3, 1934, the provisions of the Glass-Steagall Act of 1932, relating to loans by reserve banks to member banks when such banks had no paper eligible for rediscounting under the regular provisions of the Federal Reserve Act. Similarly, we find an extension here of the provision for the making of ninety-day loans by federal reserve banks directly to individuals, partnerships, and corporations on their promissory notes secured by government securities

first made in the Emergency Relief and Reconstruction Act of July 1, 1932. Such loans were not provided for in the Federal Reserve Act originally, although European central banks commonly have made them. Very little use has been made of this provision of the law.

Title V (Appropriation)

The sum of \$2,000,000,000 was appropriated for the purpose of carrying out the Emergency Banking Act.

3. REOPENING THE BANKS

On March 9, the same day the Emergency Banking Act was passed and approved, and the last day of the four-day banking holiday, the President issued a proclamation continuing the bank holiday, and on the next day he issued an executive order providing for the reopening of banks considered sound for conducting normal banking operations. The procedure outlined for reopening was as follows:

All member banks of the Federal Reserve System, desiring to reopen for the performance of all usual and normal banking functions, had to apply for a license to the Secretary of the Treasury through the federal reserve banks. Licenses were to be issued at the reserve banks upon approval of the Secretary of the Treasury. State banks not members of the Federal Reserve System were to be licensed for reopening by the appropriate state officials, who were authorized by the terms of the executive order and by a statement by the Secretary of the Treasury of the same date to license such banks provided they were in sound condition.

The effects of this executive order and subsequent regulations were surprisingly satisfactory. Before the end of March about 12,800 out of the 18,000 banks still in operation before the bank holiday had been licensed to reopen on an unrestricted basis. Moreover, during the month it became evident that the currency panic had passed. Between March 4 and April 5, \$1,225,000,000 of money was returned to the reserve banks, of which \$645,000,000 consisted of gold coin and gold certificates. Currency thus returned to the reserve banks by member banks represented in part a return of cash which the banks themselves had withdrawn from the reserve banks to increase their own vault holdings, and in part hoarded cash returned to member banks by their customers. By this return flow of currency the member banks were enabled to reduce their borrowings from the reserve banks by \$1,000,000,000, thus placing themselves in an easier credit condition. As for the reserve banks, their total reserves advanced from \$2,800,000,000 on March 4 to \$3,490,000,000 on April 5, the highest level since the autumn of 1931, and their reserve ratio rose from 45.1 per cent to 59.7 per cent.

Confidence in the country's banks had been in large measure restored. Thousands of the weaker banks had been closed before the crisis of 1933. Several thousand more with impaired assets were not permitted at once to reopen. The banks that were permitted to reopen on an unrestricted basis — while they were not all sound in the sense of having unimpaired assets equal in value to their liabilities — might be presumed to be reasonably sound, and capable of withstanding any run likely to be made upon them, in view of the liberal lending policy of the reserve banks made possible under the Emergency Banking Act.

4. ABANDONING THE GOLD STANDARD

While the banks were being reopened and confidence was being restored in this satisfactory way, the country abandoned the gold standard, and did so, quite curiously, at a time when the monetary gold stock of the United States amounted in round numbers to \$4,300,000,000, and the gold reserves of the Treasury and the reserve banks totaled close to \$4,000,000,000, or about one third of all the gold reserves held by central banks and governments of the world. Because we held such enormous supplies of gold some economists have since contended that our departure from the gold standard was unwise and unnecessary, a matter which will be considered in later pages.

There is some question as to the exact date of our departure from the gold standard because several steps taken at different dates were involved in the process. We began to slip from the gold standard when President Roosevelt in his proclamation of a bank holiday on March 6, in effect suspended redemption of federal reserve notes in gold, thus reducing them to the status of inconvertible paper money. The departure from gold became more evident when the President on April 5, 1933, issued an order forbidding the hoarding of gold. This order required all persons to deliver to a federal reserve bank or an agent thereof on or before May 1, 1933, all gold coin, gold bullion, and gold certificates owned by them, except gold required for legitimate and customary use in the arts, gold coin or certificates in an amount not exceeding \$100 held by any one person, gold coins having a recognized special value to collectors, gold held in trust for foreign governments or central banks, and gold licensed for other proper transactions. Upon receipt of such gold coin, gold bullion, or gold certificates, reserve banks or member banks were to pay an equivalent amount in other forms of coin or currency issued under the laws of the United States. The penalty for violation of this order was a fine of not more than \$10,000, or imprisonment for not more than ten years, or both.

The next step was taken on April 20, when the President issued an order placing an embargo on the exportation of gold, and placing transfers of credit from banking institutions within the United States to any foreign banking institution under the regulation of the Secretary of the Treasury. After this executive order was issued, gold could be exported or earmarked for foreign account only under certain narrowly prescribed conditions.

The final step in the departure from the gold standard was taken on June 5, 1933, when Congress in a joint resolution nullified the gold clause in all debt contracts by declaring obligations which had been specifically made payable in gold now payable in any kind of legal-tender currency. The most significant clauses in this epoch-making resolution are as follows:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) every provision contained in or made with respect to any obligation which purports to give the obligee a right to require payment in gold or a particular kind of coin or currency, or in an amount in money of the United States measured thereby, is declared to be against public policy; and no such provision shall be contained in or made with respect to any obligation hereafter incurred. Every obligation, heretofore or hereafter incurred, whether or not any such provision is contained therein or made with respect thereto, shall be discharged upon payment, dollar for dollar, in any coin or currency which at the time of payment is legal tender for public and private debts. Any such provision contained in any law authorizing obligations to be issued by or under the authority of the United States, is hereby repealed, but the repeal of any such provision shall not invalidate any other provision or authority contained in such law....

All coins and currencies of the United States (including federal reserve notes and circulating notes of federal reserve banks and national banking associations) heretofore or hereafter coined or issued, shall be legal tender for all debts, public and private, public charges, taxes, duties, and dues, except that gold coins, when below the standard weight and limit of tolerance provided by law for the single piece, shall be legal tender only at valuation in proportion to their actual weight.

While many persons were horrified at this public violation of the "sanctity of contract," it may be noted that governments are more or less accustomed to let public policy override the sanctity of contracts, just as a court of equity in arriving at a just decision may depart from a strict interpretation of the letter of the law. Whether or not the resolution in question represented sound public policy will be considered later.

5. THE INFLATION BILL

Closely related to the joint resolution nullifying the gold clause was the so-called Inflation Bill of May 12, 1933. The Inflation Bill, not so called,

of course, by Congress, was not an independent bill, but was tacked on as an amendment to an act dealing primarily with agricultural purchasing power and indebtedness. It was called the Inflation Bill because it conferred most extraordinary powers upon the President of the United States to be exercised for the purpose of inflating the currency and generating a rise in prices. These powers were as follows:

1. The President was authorized to direct the Secretary of the Treasury to enter into agreement with the Federal Reserve Board to permit the federal reserve banks to purchase in the open market \$3,000,000,000 in government securities in addition to those already held at the time. No suspension of the reserve requirements of the federal reserve banks which might be necessitated by such open-market operations should require the imposition of a graduated tax upon any deficiency in reserves as provided in the Federal Reserve Act originally, nor require any automatic increase in the rate of interest or discount charged by any federal reserve bank.

2. If the reserve banks failed to agree to expand credit by such open-market operations or if the purchase of \$3,000,000,000 in government securities by the reserve banks proved to be inadequate to accomplish the purpose intended (obviously, raising of prices), the President was authorized to direct the Secretary of the Treasury to issue United States notes (greenbacks) to an aggregate amount of not more than \$3,000,000,000. Such notes were to be issued only for the purpose of meeting maturing federal obligations, to repay sums borrowed by the United States and for purchasing United States interest-bearing securities, and they were to be retired at the rate of 4 per cent of the amount outstanding annually. While these notes were to be issued primarily for the purpose of inflating the currency, it may be observed that their issue in exchange for a like amount of interest-bearing securities would save the Government an annual sum equal to the interest of the bonds retired through their issue, and this sum, if set aside for the purpose, would provide the means of retiring the greenbacks themselves at approximately the rate named, 4 per cent a year. Doubtless this would appear to many to be an attractive method of reducing the public debt regardless of any effect it might have on the price level.

3. The President was authorized to fix by proclamation the weight of the gold dollar and to fix the weight of the silver dollar in grains at a definite ratio to the gold dollar at such amounts as he might find necessary to "stabilize domestic prices or to protect foreign commerce against the adverse effects of depreciated foreign currencies" and to provide for the unlimited coinage of such gold and silver at the ratio fixed. In no event

was the present weight of the gold dollar (23.22 grains of fine gold) to be reduced by more than 50 per cent. This represented an extraordinary grant of power, since it empowered the President to re-establish by proclamation the free and unlimited coinage of silver at a mint ratio to gold below the market ratio, a subject on which Presidential campaigns and many Congressional battles had been fought in the United States in the preceding half-century, and it empowered the President to double the gold reserves of the country in terms of dollars by substituting a new standard dollar of 11.61 grains of fine gold for the old dollar of 23.22 grains.

A further provision of this act authorized the Federal Reserve Board, upon the affirmative vote of not less than five members and with the approval of the President, in time of emergency to increase or decrease from time to time at its discretion the reserve balances required to be maintained by member banks against either demand or time deposits. This power might, of course, be used for either deflationary or inflationary purposes, and may have been designed either as a check upon the other inflationary measures or as a supplement to them.

It will be worth while now to recapitulate the possible effects of the inflationary measures discussed up to this point:

The number of gold dollars in the country could be doubled by the 50 per cent maximum devaluation of the gold dollar; silver could be freely coined at a mint ratio below the present market ratio — at some such ratio perhaps as 32 to 1; \$3,000,000,000 of greenbacks could be issued; additional billions of federal reserve notes and federal reserve bank notes could be issued — the latter without limit so far as gold reserves were concerned; some \$900,000,000 of additional national bank notes could be issued; member banks and others could borrow from the reserve banks without meeting the regular requirements in regard to eligible paper; member bank reserve requirements could be reduced below their already dangerously low level. Obviously, if all these expedients should be utilized to the full and a rising spiral of prices should be set going, the consequences would be boundless inflation and the final results chaos and disaster.

And in closing this section on the Inflation Bill, let us ask what had been the occasion for all these measures designed to inflate the currency. The answer is, these measures were designed to correct a condition of disastrous deflation, the inevitable result of a preceding period of inflation. One might grow hilarious at this ridiculous situation, were it not so serious and so saturated with potentialities for evil. The saving feature of the situation is, however, that the responsible officials appar-

ently have no intention of using all these inflationary tools with greater effect than to "reflate" to the level of prices prevailing in the year 1926. If the Administration can achieve this purpose and avoid unlimited inflation, the results will be good and its policy justified, and on this point more will be said in the next chapter. Meanwhile, we must consider another important feature of the administration program — the Banking Act of 1933.

6. THE BANKING ACT OF 1933: ITS GENERAL PURPOSES

The Banking Act of 1933, also referred to as the Glass-Steagall Act (of 1933), represents the most comprehensive amendment yet made of the Federal Reserve Act of 1913. It was the outgrowth of widespread dissatisfaction with the practical operations of the Federal Reserve System in particular and the whole banking system of the country in general. The members of Congress who framed the bill were not agreed upon the outstanding defects of the banking system, and were not unanimously in favor of every provision of the bill, which as a finished document was a compromise between sometimes strongly opposed points of view. Nevertheless, the law in the main did undertake to correct the chief defects of the old banking system and most of its provisions the majority of students of banking would approve. The law, as enacted in June, 1933, was designed to accomplish the following purposes:

1. To discourage excessive and dangerous speculation in securities, commodities, and real estate — particularly the first — with the aid of reserve bank credit.

2. To separate the functions of investment banking from commercial banking.

3. To encourage the development of branch banking and to discourage and regulate group or chain banking.

4. To discourage the operation of banks with inadequate capital.

5. To provide for the guaranty of bank deposits.

6. To bring the banking system of the country as a whole under more complete and effective federal control.

Consider, now, the reasons for desiring these changes in the banking laws and the significance of the objects to be accomplished.

7. UNDUE USE OF BANK CREDIT IN SPECULATION

Senator Carter Glass, Chairman of a sub-committee of the Senate Banking and Currency Committee, had long been a caustic critic of the use of reserve bank credit to foster speculative activities. As the

dominating personality in the enactment of the Federal Reserve Act of 1913, it will be recalled he sought to restrict the use of reserve bank credit to short-term loans or advances for agricultural, industrial, and commercial purposes, and in Section 13 of that act the reserve banks were apparently expressly forbidden to discount commercial paper drawn for the purpose of trading in stocks and bonds and other investment securities other than United States bonds. In recent years he had emphatically expressed his disapproval of the growing practice of the reserve banks of discounting bills for member banks who at the time of such discounts were advancing loans to their own customers for the purpose of carrying or trading in speculative securities, holding that such action on the part of the reserve banks was in plain violation of the law.

Reserve bank officials who defended this practice averred that so long as the bills of exchange and notes which they discounted for member banks represented *bona fide* agricultural, industrial, or commercial short-term transactions, the member banks were by wording of the law entitled to such discounts, and they could not legally be withheld by the reserve banks. In support of this point of view they cited the passage from Section 4 of the Federal Reserve Act which provided that every reserve bank *shall* "extend to each member bank such discounts, advancements, and accommodations as may be safely and reasonably made with due regard for the claims and demands of other member banks."

It was not for the reserve banks to inquire into the use to which the commercial banks put the funds obtained by rediscounts at the reserve banks, so long as the paper had been drawn in the first place for purposes which made it eligible for rediscount. If the member banks by virtue of such discounts increased their reserves above the legal minimum and were thereby enabled to make loans for speculative purposes to brokers and others, or were themselves enabled to invest in speculative securities and real estate loans, that was their affair.

Obviously, the two sections of the law, Section 4 and Section 13, were not in harmony, and whether the reserve banks should or should not make loans which might thus be used to finance speculative operations was a matter of opinion on the proper interpretation of the law. In some cases the reserve banks did resort to the so-called direct pressure method, of refusing loans to member banks making undue use of such loans in speculative operations either on their own account or for their customers. But in general this method was not applied, loans being freely granted when eligible paper was presented for discount. In the Banking Act of 1933 more definite provisions were inserted to restrict the use of reserve

bank credit to what are sometimes called "legitimate" business transactions in contrast to speculation, as follows:

Each federal reserve bank shall keep itself informed of the general character and amount of loans and investments of its member banks with a view to ascertaining whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities, or for any other purposes inconsistent with the maintenance of sound credit conditions; and, in determining whether to grant or refuse advances, rediscounts, or other credit accommodations, the federal reserve banks shall give consideration to such information. The chairman of the federal reserve banks shall report to the Federal Reserve Board any such undue use of bank credit by any member bank, together with his recommendations. Whenever, in the judgment of the Federal Reserve Board, any member bank is making such undue use of bank credit, the Board may, in its discretion, after reasonable notice and an opportunity for a hearing, suspend such bank from the use of the credit facilities of the Federal Reserve System and may terminate such suspension or may renew it from time to time.

In order to overcome the objection that had been made by reserve bank officials that they could not lawfully refuse accommodation to a member bank presenting eligible paper for rediscount, discounting at the reserve banks was made a privilege rather than a right of member banks by changing the troublesome *shall* in Section 4 to *may*.

8. REASONS FOR REFUSING BANK CREDIT TO SPECULATORS

The objection most commonly raised to the undue use of bank credit for speculative purposes is that it diverts such bank credit from its legitimate field, short-term agricultural, industrial, and commercial loans, and thereby creates such a shortage of credit in this field as to cause a rise in the rate of interest and to hamper legitimate business operations. This argument against the use of bank credit in the speculative markets is not always valid, for the reason that it is based on the assumption that there is just a fixed amount of bank credit, and that as more of it is used in speculation there will be less of it left for legitimate business. But when the reserve banks have large amounts of excess reserves, as they did have throughout the period of speculative excess from 1923 to 1929, there is not a fixed amount of bank credit, but rather a flexible amount, and the amount can readily be increased, provided only the member banks are making loans freely for legitimate business transactions and obtaining as a result possession of plenty of eligible rediscountable paper. Obviously, the member banks have no good reason for refusing loans to business men and favoring speculators if they have resources sufficient to meet the demands of both. And there is, in fact, little evidence that

business men able and willing to give to the banks good security were unable to secure adequate short-term loans during the period of speculation from 1923 to 1929. The only real shortage of loans that developed was in quarters where the banks had made bad loans and investments and had become loaded down with frozen assets, and in quarters where the borrowers could not give good security. Before the grand smash in 1929, these conditions were local rather than general, and did not prevail in the financial centers where most of the security loans were being made.

It is true, of course, that any particular bank at any given time has a fixed lending or investment power, and that the more it lends or invests in the securities market, the less it has left to lend elsewhere. But this is not true for the whole system of banks in such a system as our Federal Reserve when the reserve banks have excess reserves. For every additional loan or investment made by any one bank in the system, an additional deposit tends to be created either in that bank or in some other bank. The more the banks lend and invest, the greater become the deposits out of which other loans and investments may grow. The only limit is the cash reserves of the banks, and these can be replenished at will by rediscounting at the reserve banks so long as the reserve banks have ample excess reserves. It is only when the member banks and the reserve banks have both expanded to the limit of their reserve requirements that additional loans and investments in one field necessarily restrict the amount of loans that may be made in other fields. It follows that too much stress may be laid on the proposition that every dollar of bank credit extended to speculators is a dollar lost to business.

In the opinion of the writer, the most serious evil of excessive use of bank credit for speculative purposes lies in the effect upon the speculative markets and the banks themselves, and not in the shortage of credit resulting therefrom to legitimate business. If during the period from 1923 to 1929 such enormous loans and investments had not been placed by the banks in speculative markets, the alternative would not have been an enormous expansion of "legitimate" bank loans, but rather no great expansion at all, unless, indeed, the physical volume of industry and trade had expanded beyond all precedent, which would have been very unlikely with the widespread policy of restriction of output and price maintenance in effect during the period.

In the absence of a great expansion in the physical volume of production and trade during the 1923-1929 period, there could have been no great expansion in the demand for bank loans for "legitimate" short-term business purposes except as the result of a substantial rise in prices of commodities. There could not, however, have been a general rise in

the prices of all commodities without a corresponding world-wide rise in prices, because the prices of agricultural products and the products of other industries with an exportable surplus could not rise above the world level. And any substantial rise in prices of non-agricultural products while the prices of agricultural products did not rise, or actually fell, would have brought on an unbalanced condition leading to an industrial depression. Such a depression would not, however, have resulted in the closing of all the banks in the country, nor even in the ruin of a very large proportion of them, for in this case they would not have been so burdened with frozen assets that they could not for the most part have met their depositors' demands for cash. It is altogether likely that if the 1933 amendment to the Federal Reserve Act, restricting the extension of bank credit on a grand scale for speculative operations, had been in effect and observed from 1923 to 1929, there would have been no complete collapse of the banking system in 1933, and no departure from the gold standard. Farm relief would have been less needed and might have taken another form than the raising of prices by the devaluation of the dollar.

9. THE SEPARATION OF COMMERCIAL FROM INVESTMENT BANKING

It was the opinion of the authors of the new Banking Act that a combination of commercial and investment banking was a dangerous feature of our banking system. This opinion was justified, not only by the recent history of some of our large banks which had combined these two banking functions, but also by the history of banking in general in the United States. The Banking Act of 1933, therefore, undertook, and wisely, to effect a separation of commercial banking from investment banking by making it unlawful for any one institution directly or indirectly to conduct both commercial and investment banking operations.

The large commercial banks had entered the investment banking business both directly through their own operations and indirectly through the formation of "security affiliates." The Banking Act of 1933 placed the following restrictions, to become effective after one year, on direct investment banking operations of national banks:

National banks were forbidden to deal in investment securities on their own account except under conditions prescribed by the Comptroller of the Currency, and in no event should a national bank purchase for its own account more than 10 per cent of the total amount of any issue of investment securities of any one corporation when such issue exceeded \$100,000, or 50 per cent of the capital of the bank. Moreover, the total amount of investment securities issued by any one obligor that a na-

tional bank might purchase and hold at any one time could not exceed 15 per cent of the amount of its paid-in and unimpaired capital stock plus 25 per cent of its unimpaired surplus. Such investment securities might include corporation bonds, notes, and debentures, but not corporation stocks. The banks were further forbidden to buy corporation stocks for the account of customers and to underwrite any issue of securities but there is some uncertainty regarding the intent of the law in these respects and it is probable that banks will be permitted to underwrite or deal in federal, state, and municipal securities and to buy and sell corporate stocks solely on the order and for the account of their customers.

The provisions of the law in respect to security affiliates require more extended discussion, including a brief description of the nature of these affiliates and the potential abuses connected with their operation. Security affiliates are corporations organized by national banks and state banks and trust companies for the purpose of carrying on a general investment banking business and of trading in securities and real estate in a broad way beyond the scope of the powers conferred upon the banks by their national or state charters. It is perhaps not too broad a statement to make that they were for the most part organized by the banks for the purposes of evading the laws under which the banks were organized and under whose restrictions they were compelled to operate. While the activities of the security affiliates became a subject of general discussion only during and after the stock market orgy of the late twenties, some of them had been operating many years. The First National Bank of New York City had organized such an affiliate as early as 1908. Its purpose was to deal in real estate and securities and to engage in other activities which, while often transacted by bankers, were not within the scope of the powers conferred upon national banks. Since the method adopted in organizing this company was followed by many other banks and shows clearly the intent of the organizers to evade the provisions of the National Banking Act, it will be briefly described.

1 The First Security Company was organized as a corporation endowed with general powers, having a capitalization of \$10,000,000, equal to that of the bank. The bank then declared a cash dividend of 100 per cent, which, however, was not actually disbursed to its stockholders. Instead, with the prior approval of the shareholders, this sum was directly subscribed to the stock of the security corporation, which was thus made fully paid, and deposited under a trust of which six senior officers of the bank were made trustees. Shareholders of the bank then had endorsed on their stock certificates a statement that they had a beneficial interest in an equal number of shares of the security affiliate, which were to be inseparable from those of the bank.¹

¹ *Hearings by the Senate Committee on Banking and Currency, 1931, Part VII, pp. 1052-53.*

Thus, the affiliate of the First National Bank was legally a separate corporation and not restricted in its investment banking and speculative operations by the bank's charter. But at the same time, from an economic and administrative point of view it was nothing but an appendage of the bank, managed by the bank's officers in the interest of the bank's stockholders.

Most of the other large banks in New York City and other financial centers of the United States sooner or later followed the example of the First National, although the same method of organizing the affiliate and tying up its control with that of the bank was not followed in all cases. Some of the banks organized not only one affiliate but several; for example, the Bank of the United States, which failed disastrously late in 1930, and in this failure the affiliates played a conspicuous part.

While there was nothing necessarily evil about the formation of such banking affiliates and their activities other than the evasion of the law, which many considered a quite innocent and justifiable circumvention of rules applied by stupid legislators, the normal functions of the affiliates and the relation existing between them and their parent bank on the one hand, and the relation between the latter and its depositors on the other hand, were such that abuses were likely to develop sooner or later in many cases. It remained for the security and real estate speculation craze of the late twenties to bring these abuses into full bloom, and for the banks, their stockholders, and their depositors to reap the harvest in the years of depression that followed.

The functions of the affiliates have been described as follows:¹

(1) Wholesalers of security issues purchasing entire offerings or participating in the purchase of banking groups which acquire whole issues of securities from governmental bodies or corporations.

(2) Retailers of securities, maintaining corps of salesmen and often branches in other states than that in which the bank operates for the distribution of stocks and bonds to institutions and private investors.

(3) Holding and finance companies, carrying blocks of securities for control or otherwise, which the bank could not or would not list among its own investments.

(4) Investment trusts, buying and selling securities acquired purely for investment or speculative purposes.

(5) An assets realization company, to take over from the parent bank loans and investments which prove doubtful or non-liquid.

(6) A medium for supporting the market for the bank's own stock.

(7) A real estate holding company.

None of these functions represents an undesirable activity *per se*, but taking these activities as a whole they are not suitable for a commercial

¹ *Hearings by the Senate Committee on Banking and Currency, 1931, Part VII, p. 1059*

bank, whose funds are provided only in small part by its stockholders, but are mainly derived from its depositors. If they are not suitable for a commercial bank, they are not suitable for an affiliated corporation, which in effect, if not in legal theory, is nothing more than a department of the commercial bank. In fact, it would be a healthier situation to have the bank itself directly engaged in such operations openly than to have it engage in them surreptitiously under the legal cover of an affiliate. As a result of its relation to the affiliate, the bank may become involved in speculative operations which will prove ruinous to the bank and its depositors as well, while the existence of the affiliate as a legally separate organization will permit the parent bank to conceal its actual condition for a time from bank inspectors and the general public. Consider some of the operations which might result in such an unfavorable result:

1. The bank may make loans to the affiliate, and in making such loans it will in effect be making loans to itself — out of its depositors' money. As a consequence the loans may be without adequate security, and the proceeds of the loans may be used in hazardous speculation — in a pool operation on the stock market, for example.

2. The bank may make unwise loans to customers of the affiliate to permit them to buy more freely securities distributed by the affiliate in its capacity as an investment banker, on which it enjoys a liberal commission. These securities may then be accepted as collateral for the loans, and if they turn out to be worthless, the loans secured by them may become frozen assets.

3. The bank may buy securities from the affiliate when the latter becomes overloaded with unsalable securities, provided these securities, however worthless they may actually be, meet the legal requirements for investments made by the bank.

4. The affiliate may be used as an instrument to manipulate the price of the bank's own stock to the enrichment of the directors or other officers of the bank with inside knowledge of its operation — other stockholders or the general public being made the victims of such artificial fluctuations in the price of the stock.

5. By a shifting of cash and other assets back and forth between the bank and its affiliates, the officers of the bank may deceive the national or state bank examiners in respect to its true condition.

Other evils which have actually developed in recent years might be added to this list which in itself is not merely hypothetical. The banking affiliate, in fact as well as in theory, has been an invitation to betrayal of trust. It has made the misuse of other people's money alluring to persons in fiduciary positions, and the road to financial manipulation and

stock-jobbing wide open and inviting. And while every bank affiliate need not necessarily be bad, the abolition of this institution by the Banking Act of 1933 is to be commended. The provision of the law in this regard was that, after one year from the date of enactment of the law, no member bank shall be affiliated in any manner with any corporation, association, or similar organization engaged in the issue, flotation, or public distribution of stocks, bonds, or other securities. Violation was made punishable by a fine up to \$1000 a day.

The Banking Act of 1933 did not merely attempt to drive investment banking operations out of the commercial banking system, but it undertook also to put an end to commercial banking by investment banking concerns, which while engaged primarily in investment banking, had made a practice in some cases of carrying deposits in the nature of commercial bank deposits. It is quite probable that had the law driven investment banking operations out of commercial banks without at the same time forbidding investment bankers to do a commercial banking business, the latter would have expanded their commercial banking business at the expense of the regular commercial banks, and the evil of the combination of the two types of banking would have persisted. The law wisely provided that, after one year from the date of its enactment, no person, firm, or corporation engaged in investment banking should engage at the same time in the business of receiving deposits. There remained one loophole, however — that of the interlocking directorate or community of interest. It would still be possible for an investment banking concern and a commercial bank to be operated as an economic unit if the same men dominated both concerns. It is not certain that the law could prevent such a condition from developing, but it has been suggested that the Banking Act of 1933 should be amended to take into consideration this possibility. It is perhaps after all not possible to have a one hundred per cent honest banking system so long as there are dishonest bankers, regardless of the provisions of the law. An interesting and presumably an unexpected result of this provision of the law has been that some of the largest investment banking houses, including J. P. Morgan and Company, have surrendered their investment banking operations in order to retain their commercial banking business.

10. CONTROL OVER GROUP BANKING

In addition to abolishing security affiliates, the Banking Act of 1933 undertook to establish some degree of national control over another type of affiliated banking institutions, that represented by what may broadly

be called "group banking." Group banking has developed on a considerable scale in the United States in recent years and has become a matter of concern because of its actual and potential abuses. "Group banking" is a term which has as yet developed no definitely fixed meaning, and is often used interchangeably with the term "chain banking." Between these two terms some writers draw the following distinctions:¹

Group banking is said to exist when two or more banks are controlled through ownership of their stock by a corporation organized expressly for that purpose. Chain banking, on the other hand, exists when an individual or a group of individuals exercise control over two or more banks through stock-ownership or some other device giving them power to elect a majority of the board of directors of each bank in the chain. In a broad sense the term "group banking" may be made to cover the concept of chain banking and that type of banking operations already discussed under the head of security affiliates.

How important the development of group and chain banking had become in the United States is indicated by the fact that the Report of the Economic Policy Commission of the American Bankers' Association stated the number of group and chain banking systems in May, 1930, to be 269, the number of banks controlled to be 1922, and the resources controlled to amount to \$15,285,000,000. Among the more important bank holding corporations in January, 1930, were the Transamerica Corporation with 18 banks and resources of \$1,891,201,000; Detroit Bankers' Company with 21 banks and resources of \$711,006,000; Guardian Detroit Union Group with 36 banks and resources of \$509,949,000; The Northwest Bancorporation, of Minneapolis, with 92 banks and resources of \$454,141,000, and the First Bank Stock Corporation, of Minneapolis, with 78 banks and resources of \$433,074,000. There were other important groups in various other parts of the country, east, west, and south, but the greatest relative progress in group and chain banking had been made in Michigan, Wisconsin, Minnesota, and the Dakotas.

Federal control over group banking could be exercised only indirectly, since the holding companies involved had state charters and could not be directly controlled by the Federal Government. The Banking Act of 1933 used the following device as an indirect instrument of control:

A holding company must obtain a permit from the Federal Reserve Board to vote the stock of the national banks which it controls. If it fails to do this, the banks cannot receive public deposits and the holding company cannot receive dividends from them. As for state member banks controlled, if the holding company does not obtain a permit to vote

¹ Cf. Cartenhour, *Branch, Group and Chain Banking*, chapter IV.

their stock, these banks lose their membership in the Federal Reserve System. Holding companies applying for such permits must agree to permit examination of their accounts by government bank examiners at dates identical with the dates on which their controlled banks are examined so that the relations between the banks and the holding company shall be fully disclosed.

Obviously, these provisions of the law do not give the Government complete control over group and chain banking. Groups or chains built up without the use of a holding company are not reached; neither are state banks not members of the Federal Reserve System. And the penalty for non-observance of the law in respect to state member banks is merely the loss of membership in the Federal Reserve System, which some banks have relinquished voluntarily and others have embraced with reluctance. However, if the banking system should be unified, as seems to be the purpose of other provisions of the Banking Act of 1933, yet to be discussed, the degree of control over group banking would become greater.

11. BRANCH BANKING AND THE BANKING ACT OF 1933

By "branch banking" is meant a system of banking under which a banking corporation operates a central or head office, and in addition a number of branch offices. In countries in which branch banking has become the dominant form of banking, as in England, France, Germany, and Canada, there is a small number of large banking corporations, each with a large number of branches, the total number of branches being somewhat comparable to the number of our unit banks.

Group banking, chain banking, and branch banking have this in common, that all three represent control over a number of bank offices by one person, group, or corporation. But from the point of view of sound banking, it is generally agreed among students of banking that the system of branch banking is superior to group or chain banking, because it has practically all of the advantages of group or chain banking without some of the serious disadvantages of those systems. The most serious disadvantage of group and chain banking is the difficulty of effective government supervision, with all the evils that may grow out of that condition.

In the United States, for example, a group or chain of banks may embrace national banks, state member banks of the Federal Reserve System, and non-member banks; and the state banks may be located in several different States. Effective supervision of such a heterogeneous group becomes practically impossible; effective supervision of a group

requires that the members of the group be examined simultaneously, or practically so, by a corps of examiners using identical methods. On the other hand, a single large bank with numerous branches confined to one banking jurisdiction, may be regulated and examined by public officials as a unit, even though simultaneous examination of hundreds of branches is no easy task. The opportunity for concealment and corruption is much less than in the case of groups or chains.

As compared with banking by thousands of unit banks, most of which are small in size, branch banking offers the following advantages:

(1) A few large banks with numerous branches offer the depositors, particularly in small cities, greater safety than a large number of small unit banks. In the first place, a large bank will have more competent management than a small bank; its chief officers will be men of broader experience and wider training than the average small-town banker. And if the local managers of the branches are not in themselves superior to the independent local banker, they will have the advantages of the banking experience and judgment of the officers of the head office, and they will be subject to supervision by the main office. In the second place, a great bank with many branches scattered over a wide area gains a certain degree of safety from diversification of risk in its loans and investments that is impossible of achievement by a small local bank.

(2) A branch office of a large bank is in a better position to satisfy the credit needs of a small city than a local bank with only limited funds, since all the funds of the great bank can be shifted about into whatever quarter of its territory they are most needed. This advantage would tend to be particularly pronounced in case of a local credit stringency because of a crop failure or a depression in a local industry, or the like.

(3) Branch banking tends to produce a greater degree of uniformity of interest rates over the whole country than a system of unit banks, because the great bank will tend to put its funds to the most profitable use, and will not lend them at low rates at one branch when high rates may be obtained at another. This does not imply that interest rates would be absolutely uniform at all branches of a bank, because the bank might consider loans in some sections of its territory more risky than in other sections and add a premium for risk, and it might also charge more for a large number of small loans than for an equal amount in a single large loan on account of the difference in labor and bookkeeping expenses.

(4) Another advantage of branch banking sometimes cited is the reduction in the percentage of cash reserves required. A large bank with

numerous branches has the advantage of centralized reserves which may be shifted about from branch to branch as required, and the total will be less than the total required for safety by a large number of unit banks with the same total amount of deposits. This is perhaps a doubtful advantage in a country where there is a tendency to overexpand credit, anyway, and in this connection one should remember that minimum cash reserve requirements serve a double purpose — they not only tend to keep the bank in a position where it has adequate cash on hand to meet demands, but they keep the banking system as a whole from running wild in undue expansion of loans and investments. Moreover, in the United States reserve requirements have been reduced by the development of the Federal Reserve System with its pooling of reserves in the reserve banks.

Over against these advantages of branch banking are certain disadvantages which may now be briefly considered. It is often asserted that the management of the locally owned unit bank will better understand and be more responsive to local needs than the hired managers of the local branch of a distant large city bank. The hired manager will not be given full responsibility and free rein, but will be hemmed in with red tape. His loans will be based primarily on collateral rather than on character, and will tend to be given most freely where least needed. Moreover, the main interest of the large bank will be in the city of its main office, and not in the localities in which its branches are located. The branches will tend to become merely offices for the purpose of mopping up liquid funds to be transferred for lending and investment at the main office. The financial centers will thus suck the life blood, financially speaking, from the rest of the country.

Although there is doubtless considerable truth in some of these contentions, the danger of developments of this sort is much less than many fear. This does not seem to have been the result in Canada and other countries where branch banking has become dominant. It is probably true that the hired branch manager would often be less responsive to local needs and the demands of necessitous borrowers than the president or cashier of a locally owned unit bank, but in many cases this would be an advantage rather than a disadvantage. Fewer bad loans would be made. Banking should remain a business, not a charitable enterprise, particularly in view of the fact that the money a bank doles out in charity of this type belongs mainly to its depositors. As for the charge that the large bank would pump the liquid funds out of the small cities into the financial centers by soliciting deposits mainly in the former and lending and investing mainly in the latter, it does not seem likely

that this would be the normal result. If the management of the large bank is more interested in its bank than in the city of its main office — and it is a reasonable assumption that this would usually be true — then it will use its funds to the best advantage of the bank. In this case loans would tend to be made quite freely in the smaller cities where the branches were located, because interest rates are commonly higher there than in the financial centers — in the United States 6 per cent or more, as against 3, 4, or 5 per cent in the financial centers. At times of speculative frenzy on the stock exchange, call money and time money may command higher rates in the financial centers, but this is the exception rather than the rule. In fact, there is much reason to believe that the establishment of numerous branches of strong banks in small places would tend to divert funds from the financial centers to the rest of the country, rather than the reverse because of this difference in the interest rates, and that this flow of funds would tend to wipe out such disparity in rates, except in so far as they were the result of differences in risk.

In this connection one must distinguish between the self-interest of the local bankers and the interest of the general public. The local bankers naturally dislike to be driven from business by branches of large city banks. The development of branch banking need not, of course, always represent calamity for local bankers. Both the local banks and their management may be absorbed by the larger organization. Moreover, at present many communities in the United States must choose between having a branch of a large bank or no adequate banking facilities at all. The thousands of small banks with inadequate capital which have failed in the last dozen years should probably never have been organized, and might now with advantage be replaced by branches of larger institutions without great loss to any vested interest.

Branch banking, while favored in many other countries, has been severely restricted by the banking laws of the United States, with the result that the less desirable types of banking, group banking and chain banking, have grown to large proportions. According to a revised summary of state laws relating to branch banking published by the *Federal Reserve Bulletin* of July, 1932, only 9 States permitted state-wide branch banking, 14 permitted branch banking only within limited areas, 18 prohibited branch banking, and 7 had no legislation on branch banking. Where branch banking was restricted to limited areas, the branches of a bank were restricted to the city of the main office, to the county of the main office, or to cities and counties contiguous to the city or county of the main office.

As against these restrictions on branch banking, there have been no similar restrictions on group or chain banking, so that these types have been permitted to develop on a state-wide and even interstate basis. Group banking has developed in practically all States, but its greatest development has been in states placing the most severe restrictions on branch banking.

Another aspect of the branch banking problem has concerned the relative status of national and state banks. National banks were not permitted to establish branches prior to the enactment of the McFadden Act of 1927. This gave state chartered banks an advantage over national banks in those States which permitted branch banking and led to the withdrawal of some banks from the National System and the threatened withdrawal of many more. The McFadden Act permitted national banks to establish branches, but only on a city-wide basis, so that national banks were not placed on a par with state banks in States which permitted state-wide branch banking. In order to give national banks some protection in their competition with state banks, the McFadden Act provided that non-member state banks might join the Federal Reserve System only after giving up branches established after the date of approval of that act. While affording the national banks some protection in this way, the McFadden Act in some measure restricted branch banking so far as its spread among state banks was concerned in favor of group and chain banking.

We come now to the bearing of this discussion upon the provisions of the Banking Act of 1933. Under the new banking law, a national bank may, with the approval of the Comptroller of the Currency, establish and operate branches in accordance with the law of the State in which it is located, subject, however, to the following restrictions:

(1) The bank shall have a minimum capital of \$100,000 if the population of the State is under 500,000 and the state has no city with a population of more than 50,000.

(2) The bank shall have a minimum capital of \$250,000 if the population of the State is over 500,000 and under 1,000,000, and the state has no city with a population of more than 100,000.

(3) The bank shall have a capital of \$500,000 in all other cases.

(4) The aggregate capital of every national bank and its branches shall at no time be less than the aggregate minimum capital required by law for the establishment of an equal number of national banks situated in the various places where such bank and its branches are situated.

In this connection may be noted also the increase in the minimum

capital requirements of national banks provided for by the Banking Act of 1933. The new requirements are:

In places with a population of less than 6000, the minimum capital is \$50,000, as against an old minimum of \$25,000; in places with a population of more than 6000 but less than 50,000, a minimum of \$100,000 is required, and in places with a population of over 50,000, the minimum capital is \$200,000.

Related to these provisions for national banks is the provision that no state bank shall be admitted to membership in the Federal Reserve System unless it possesses paid-up capital sufficient to entitle it to become a national bank in the place where it is situated. Certain exceptions are made to permit state banks and trust companies, situated in places with a population of not more than 3000, to become members with a minimum capital of \$25,000. The purpose of these increases in the minimum capital requirements is to reduce the number of banks with insufficient capital to operate on a safe basis. It is obvious that a bank with a capital of less than \$25,000, and possibly one with a capital of less than \$50,000, must operate either almost exclusively with money contributed by depositors, or with such a small amount of resources that a rate of return which may be had on safe loans and investments will not be great enough to pay its expenses of operations. Neither of these conditions is in the public interest.

An incidental result of this increase in the minimum capital requirements of a unit bank and the more liberal provisions for branch banking by national banks will be substitution of branches of large banks for many of the inefficient and uneconomical unit banks.

12. THE BANKING ACT OF 1933 AND THE GUARANTY OF BANK DEPOSITS

In view of the fact that during the twelve years, 1921-1932, 10,816 banks — more than one third the total number of banks in the country — with deposits of \$4,885,126,000, had suspended with an estimated minimum loss to depositors of more than \$1,600,000,000, it is not surprising that a strong sentiment prevailed in Congress for the guaranty of bank deposits by national legislation, even though state experiments along that line had uniformly failed, sometimes with disastrous results. Against considerable opposition the advocates of a guaranty system succeeded in writing into the Banking Act of 1933 certain clauses providing for "insurance" of bank deposits. The insurance was to be provided under two plans, a temporary plan to go into effect on January 1, 1934, and a permanent plan to supplant the temporary plan and go into effect on July 1, 1934.

It will be convenient to present first the details of the permanent plan, including the source of the insurance funds, the amount of deposits insured, the classes of banks included, the disposition of the assets of suspended banks, and the nature of the administrative machinery provided by the law.

The law creates a Federal Deposit Insurance Corporation whose management is vested in a board of directors consisting of the Comptroller of the Currency and two other members appointed by the President of the United States. The capital funds of FDIC are to be supplied from three sources to the extent of approximately \$400,000,000, of which about one third is to be paid in, while the rest remains subject to call. The Federal Government subscribes \$150,000,000, the federal reserve banks about \$139,000,000, and the member and non-member banks of the Federal Reserve System provide the remainder. The member banks of the Federal Reserve System are required to participate, and the non-member banks, including both commercial banks and mutual savings banks, may participate upon meeting specified requirements. Participating banks subscribe to the insurance fund an initial amount equal to one half of one per cent of their total deposit liabilities, and receive in exchange for the amount paid in Class A stock in the FDIC entitled to cumulative dividends at the rate of 6 per cent per annum or 30 per cent of the net earnings of the FDIC, whichever is greater. The Federal Government is to receive the same rate of return on its contribution as the Class A stock. The contribution of each of the federal reserve banks is to be an amount equal to one half of its surplus on January 1, 1933, and the reserve banks are to receive in return for this contribution Class B stock of the Corporation, not entitled to dividends.

The capital funds of the Corporation thus obtained are to be supplemented when necessary to meet the claims of depositors of suspended banks by an assessment levied upon all participating banks in proportion to their deposit liabilities. This contingent liability of the participating banks is unlimited and may become much greater than the initial sums paid in for capital stock, and is the source of most of the opposition to the plan by bankers.

Before a national bank is admitted to the fund — that is, to membership in the insurance system — the Comptroller of the Currency must certify that its assets are adequate to meet all liabilities to its depositors and other creditors, not including, of course, its stockholders, and before a state member bank of the Federal Reserve System is admitted to the fund, the Federal Reserve Board must make a similar certification.

Non-member banks which are admitted to the temporary fund, to be discussed below, may secure the benefits of the permanent fund by subscribing to stock in the Corporation on the same basis as member banks. But before being admitted to the temporary fund they must be certified as solvent by their respective supervisory authorities and must be examined by the Corporation.

After July 1, 1936, non-member banks participating in the fund were to qualify for membership in the Federal Reserve System and become members of the Reserve System in a reasonable length of time, or retire from the insurance fund. That is to say, after July, 1936, membership in the Federal Reserve System was to become compulsory upon all banks as a condition of membership in the insurance fund. Presumably this was tantamount to compulsory membership in the Federal Reserve System, since no commercial bank would be likely to retain its depositors if it did not insure their deposits while other banks in its community did. The insurance plan thus becomes a means of unifying the banking system of the country. This would not be perfect unification, though, because the evil of competing state and national supervisory bodies would still exist. There is, of course, the possibility that banks in some cases might set up co-operative deposit insurance plans independent of the federal system and that such a development would stand in the way of unification. Instead of some non-member banks joining the Federal Reserve System in order to obtain the benefits of federal insurance, some member banks might withdraw to escape its burdens.

Another element of compulsion in the insurance system is that every national bank and every state member bank of the Federal Reserve System must become a Class A stockholder in the FDIC.

The permanent plan provides a 100 per cent guaranty on the amount due each depositor not exceeding \$10,000; a 75 per cent guaranty on the amount of the deposit in excess of \$10,000 but not in excess of \$50,000; and a 50 per cent guaranty on the amount in excess of \$50,000. It has been estimated that these figures represent a guaranty of about 79 per cent of total deposits of all the banks in the Federal Reserve System, but for large banks with many large deposits the percentage of deposits guaranteed would be less and in small banks, more, in some cases nearly 100 per cent.¹

When a national bank is closed because of inability to meet the demands of its depositors, the Comptroller of the Currency appoints the FDIC receiver for the bank. The Corporation then proceeds to or-

¹ These estimates are from *Bulletin no. 3, Commission on Banking Law and Practice, Association of Reserve City Bankers.*

ganize a new national bank to assume the insured deposit liabilities of the closed bank and to conduct temporarily a limited banking business. The Corporation shall make available to the new bank an amount equal to the insured deposit liabilities of the old, and these funds shall be credited ratably to the depositors of the old bank, who thus become depositors in the new bank. The new bank may accept new deposits which, together with the amounts received from the Corporation, shall be kept in cash, invested in United States obligations, or deposited with the Corporation or a federal reserve bank.

The new bank shall be managed temporarily by an executive officer designated by the Corporation, and need not have a board of directors. When it considers it desirable to do so, the Corporation may offer capital stock of the new bank for sale on such terms and in such amounts as it deems advisable, and stockholders of the old bank are given the first opportunity to subscribe. If an adequate amount of capital is not raised, the Corporation may offer to transfer the business to any other banking institution which will agree to take it over. If the Corporation finds no purchasers for the stock and no other banking institution will take it over within two years, the Corporation is to place the bank in voluntary liquidation and wind up its affairs. Procedure in the case of a closed state bank is quite similar, but it may be observed that, in the case of a state bank which is thus closed, a national bank will be organized in its place, and not another state bank.

Before passing on to a critical estimate of the permanent insurance plan, it will be convenient to consider briefly the temporary plan. The temporary plan was designed to be operative only six months, from January 1, 1934, to July 1, 1934, until the permanent plan could be put into effect. Members of the temporary plan were to be all member banks licensed before January 1, 1934, by the Secretary of the Treasury, and all non-member state banks with the approval of the state supervisory authorities, after certification of solvency and approval by the Corporation. Both member and non-member banks were to pay to the Corporation an amount equal to one half of one per cent of the insured deposits certified as of the fifteenth of the month preceding the month they were admitted. Each member of the temporary fund was subject to one additional assessment of one half of one per cent of deposits and no more. Insurance was up to \$2500 for any one depositor. While this left a large proportion of the deposits of large depositors uninsured, it has been estimated that this sum covered in full the deposits of 96.5 per cent of all the depositors in the insured banks.

13. CRITICISM OF THE GUARANTY SYSTEM

If one may judge from publicly expressed views, a very large proportion of all bankers oppose the permanent plan of deposit insurance, although the temporary plan seems to have been generally accepted as a worth-while expedient for placing the banking system as a whole on a sounder basis. The opposition of state bankers is based in part upon their belief that the guaranty system is to be used as a device to drive them under federal control. But the bankers' opposition as a whole has a broader basis than this. The bankers' point of view is expressed in a bulletin on *The Guaranty of Bank Deposits* issued in November, 1933, by the Commission on Banking Law and Practice of the Association of Reserve City Bankers, which makes the following criticisms of the plan:

(1) It throws the burden of future banking losses upon the banks without giving them the power to control those losses.

(2) There is no limit to the contingent liability imposed on all the participating banks, and the total cost may prove ruinous to the sound banks in the system.

(3) The plan, by making deposits in all banks equally safe, will encourage unsound banking. Those banks which might desire to pursue a conservative loan and investment policy would be foregoing the profits that might be derived from unsound practice while being compelled to assume the risks of the losses eventually suffered by the unsound banks.

(4) Guaranty of bank deposits has been tried in eight States since the panic of 1907, and abandoned in all, having proved uniformly unsatisfactory and in some cases ruinous.

These arguments against the insurance system may now be briefly considered. It is clear that insuring bank deposits does not insure sound banking. And while the Banking Act of 1933 is intended among other things to prevent reckless expansion of bank credit in another orgy of speculation, whether it will do this or not remains to be seen. In the United States laws are often laxly enforced or evaded, and the various inflationary provisions of recent monetary legislation may prove to be a powerful neutralizer of the anti-speculation provisions of the Glass-Steagall Act. Should another huge orgy of speculation be fomented by inflation of the currency and permitted by the central banking authorities, the losses to the insured banks and the burden upon the solvent banks would be terrific.

How large these losses might have been if the guaranty system had been in operation from 1921 to 1932 is shown in Table XXXIII. The

TABLE XXXIII. ESTIMATED LOSSES TO DEPOSITORS OF STATE AND NATIONAL BANKS WHICH SUSPENDED DURING 1921-1932*
Exclusive of mutual savings and private banks (in millions of dollars)

Year	Deposits of active banks June 30	Capital funds of active banks June 30	Deposits of banks suspending	Estimated loss to depositors of failed banks †	Estimated loss which would have been borne by the Guaranty Fund ‡	Ratio of losses to deposits of active banks (per cent)	Ratio of losses to capital funds of active banks (per cent)
1921.....	\$32,948	\$5,884	\$ 163	\$56	\$50	0.15	0.85
1922.....	35,193	5,987	89	31	27	0.08	0.46
1923.....	37,818	6,177	146	50	45	0.12	0.73
1924.....	40,884	6,373	202	69	62	0.15	0.98
1925.....	44,704	6,580	160	55	49	0.11	0.75
1926.....	46,346	6,954	250	86	77	0.17	1.11
1927.....	48,534	7,331	195	67	60	0.12	0.82
1928.....	49,645	7,879	139	48	43	0.09	0.54
1929.....	48,796	8,513	223	76	69	0.14	0.81
1930.....	50,550	8,943	822	281	253	0.50	2.83
1931.....	46,770	8,326	1,669	571	514	1.10	6.17
1932.....	35,311	7,039	698	239	215	0.61	3.05
Total....	\$517,499	\$85,986	\$4,756	\$1,629	\$1,464	.....	.....
Annual average for 12 years.....	\$43,125	\$7,165	\$397	\$136	\$122	0.28	1.70

* Guaranty of Bank Deposits, Bulletin no. 3, Commission on Banking Law and Practice, Association of Reserve City Bankers, p. 14.
† Estimated on the basis of experience at 11 per cent of the deposits of reopened banks and 40 per cent of the deposits of banks placed in liquidation.
‡ Estimated at 90 percent of the total loss to depositors because of the predominance of small institutions among failed banks.

Note.—Two losses in the failed banks during recent years do not tell the whole story because many insolvent banks were kept open temporarily until the crisis of 1933.

table shows that the estimated losses to depositors of closed banks during this twelve-year period amounted to an annual average of \$136,000,000, and the estimated loss which would have been borne by the insurance fund amounted to \$122,000,000. The last-named figure represents 0.28 per cent of the deposits of active banks, or to 1.7 per cent of their capital funds. The average annual losses were, however, much larger during the last three years of the period than during the first nine, the average annual losses during the three years 1930-1932 having been

TABLE XXXIV. RESULTS OF STATE GUARANTY PLANS *

State	Duration	Type	Total assessments	Final deficit
Kansas.....	1909-1929	Voluntary	\$2,685,000	\$7,175,000
Mississippi.....	1915-1930	Compulsory	1.2% of capital	5,000,000
Nebraska.....	1911-1930	Compulsory	\$17,700,000	22,000,000
North Dakota.....	1917-1929	Compulsory	2,000,000	14,000,000
Oklahoma.....	1908-1923	Compulsory	3,700,000	7,500,000
South Dakota.....	1916-1931	Compulsory	15,000,000 ‡	36,769,000§
Texas.....	1910-1927	Choice †	||	.....
Washington.....	1917-1921	Optional	||	.....

* *Guaranty of Bank Deposits*, Bulletin no. 3, Commission on Banking Law and Practice, Association of Reserve City Bankers, p. 32.

† Choice between joining fund or posting bond equal to capital.

‡ For period 1920-1925.

§ As of June 30, 1930.

|| Because of the failure of one large bank in 1921 the plan broke down and the banks withdrew, but the law was not repealed until 1929.

\$364,000,000, and the estimated annual loss which would have been borne by the guaranty fund amounting to \$327,000,000, or 0.74 per cent of the deposits of active banks, or 4.04 per cent of their capital funds. These estimated losses are, moreover, probably understated. They are based on the assumption that the losses would amount to 11 per cent of the deposits of reopened banks and 40 per cent of the deposits of banks placed in liquidation — these figures being based on experience of earlier years. But in recent years the actual losses will doubtless prove to be greater than the percentages here assumed.

To make the case against this insurance plan look even darker, it can be pointed out that a substantial burden of this sort falling upon the banks during a period of hard times and small earnings would tend to force many on the borderline of failure across the line into receivership, thus reducing the number of solvent banks left to bear the burden and making the burden correspondingly harder to bear. The process would be a cumulative one, its force increasing with the number of failures precipitated by its action.

This is the view of the bankers who might be called upon to pay the cost. There is, however, a more optimistic point of view. In the period,

1930-1932, many of the bank failures were the result of the panicky withdrawal of funds by depositors, who would not have withdrawn their deposits if they had been guaranteed. Therefore, it might be reasoned that if the guaranty system had then been in operation a much smaller number of banks would have failed. Not only would fewer banks have been closed because of runs, but many others which became insolvent through depreciation in the value of their assets might have been saved. The depreciation in the value of many bonds and other investments did not result in the first place from any serious doubts as to their eventual intrinsic value, but mainly from the relentless pressure of liquidation by banks in the race for liquidity, itself the result of a desire to gather up cash available to meet runs of frightened depositors. If this is true, then the great losses suffered by depositors when the banks were not under an insurance system cannot be used as a gauge of the probable losses under an insurance system. But here we must be on guard against an overoptimistic view. Even under a system of guaranty of bank deposits, there would be runs on banks if the depositors lost faith in the guaranty. In that case depositors would still prefer cash in hand to the possible protection of a guaranty fund which might fail them in the end. Unhappily, there is no way short of trial of the expedient to determine how it will work. Abstract reasoning alone provides no definite conclusion. But this much can be said: should the system when tried fail in an emergency like that of 1932, the disaster resulting would be even greater than that which we suffered then. The strong banks would be dragged down with the weak, and none would be left to aid in the work of reconstruction.

As for the argument drawn from the unhappy results achieved under state guaranty systems, too much stress should not be laid upon it. These systems failed in large measure because of inadequate supervision of the state banking systems. Under a national unified system better results might be expected. But the insured banks should all be members of the Federal Reserve System, or, better yet, members of the National Banking System, and subject to effective supervision.

14. THE TEMPORARY INSURANCE IN OPERATION

The temporary plan of bank deposit insurance was duly placed in operation on January 1, 1934. At the end of the first month of operation officials of the Federal Deposit Insurance Corporation made public the following facts in respect to the results achieved during the first month:

At the close of business January 31, 1934, the number of banks holding membership in the temporary fund was 13,434, the number of depositors

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insured was 54,250,240, and the amount of the insured deposits was \$15,345,832,955 out of a total of \$42,260,253,890 of deposits in all banks in the United States. The ratio of insured deposits to total deposits was 36.1 per cent. It should be recalled in connection with this ratio that the fund insured deposits only up to the amount of \$2500 per account.

Among the banks obtaining membership in the fund were 7383 banks not members of the Federal Reserve System; these banks must either join the Federal Reserve System when the permanent plan goes into effect or give up their membership in the insurance fund.

Only 141 banks applying for membership were turned down, and only a few banks failed to apply, so that most of the banks of the country may be said to have become members of the insurance system. Some of the mutual savings banks of New England did not apply for membership, having shown no losses in years and being in such a strong financial position that they did not feel the need of federal insurance.

During the first month of operation no member bank of the insurance fund closed and the Corporation consequently was not called upon to pay out any of its funds to reimburse depositors for losses. The Corporation during this initial period had called upon its members for only 0.25 per cent of their deposits as a fund out of which to pay losses and did not expect to be called upon to levy additional assessments. One of the favorable results of the inauguration of the insurance plan was the substantial reduction in hoarding and the consequent increase in bank deposits, which increased bank reserves and placed the banks in a stronger position to finance industry and trade.

The temporary plan has continued to function satisfactorily. By the end of March, 1934, the number of banks holding membership in the fund had increased to 13,870, the number of insured accounts had risen to 55,597,695, and the amount of insured deposits was \$15,700,917,289, or about 41 per cent of the aggregate deposit liabilities of the insured banks. At the end of March, 1934, banks which were operating without restriction, but did not belong to the insurance plan, included about 350 mutual savings banks with deposits of about \$3,300,000,000, and 950 other non-member banks with deposits not in excess of \$700,000,000.

While the results of the operation of the temporary plan are a cause for satisfaction, they do not represent complete proof that the plan will be satisfactory in the long run, and they have not put an end to the opposition of bankers to the permanent plan. The Banking Act of 1933 to go into effect on July 1, 1934.

of the opposition of the bankers to the permanent insurance plan, and for other reasons, the deposit insurance provisions of the Banking Act of 1933 were amended by the Bank Deposit Insurance Act of June 16, 1934. This act extends for one year the temporary plan, or until July 1, 1935, and increases the amount eligible for insurance from \$2500 of the deposits of each depositor to \$5000. This act also postpones the termination of insurance of non-member banks until July 1, 1937, and permits non-member banks to obtain the benefits of the permanent insurance after the fund is terminated (on July 1, 1935) until July 1, 1937.

15. INTEREST ON BANK DEPOSITS

One of the evils that had developed under our banking system was the competitive bidding for deposits by the banks, resulting not only in unduly high rates of interest being paid on time deposits, but in interest being paid on demand deposits. Interest on demand deposits might be paid openly as such, or the process might be concealed by classing deposits which were actually demand deposits as time deposits. Obviously, if some banks in a system of banks pay interest on deposits, other banks in the system must follow suit if they are to secure their "fair share" of deposits. Unless a particular bank receives its fair share of deposits, it must either restrict its loan and investment operations or suffer a disastrous loss of reserves through the local clearing-house or its federal reserve bank. If all the banks in the system pay unduly high rates of interest on time deposits and pay interest also on demand deposits, the whole banking system is weakened, because under such circumstances the banks are compelled to seek more remunerative loans and investments to increase their income, and more remunerative loans and investments mean more risky loans and investments, of the sort which banks cannot safely make.

To correct the evils which had arisen in this connection the Banking Act of 1933 prohibited the payment of interest on demand deposits by member banks of the Federal Reserve System, and empowered the Federal Reserve Board to regulate the rate of interest that might be paid by member banks on time deposits.

The authors of the Banking Act of 1933 were apparently aware that some banks had been resorting to subterfuges to conceal the fact that they had actually been paying interest on demand deposits. This is indicated by the wording of the following passages from the law:

No member bank shall, directly or indirectly, by any device whatsoever, pay any interest on any deposit which is payable on demand....

No member bank shall pay any time deposit before its maturity or waive any requirement of notice before payment of any savings deposit except as to all savings deposits having the same requirement.

In respect to the last-quoted passage, it is apparent that if a bank might pay a time deposit before maturity or a savings deposit without notice, such deposits would in effect become demand deposits, and the prohibition of interest on demand deposits would become ineffective.

While the majority of bankers probably favor these provisions of the law, some have been accused of seeking and finding loopholes so that the practice of paying interest on demand deposits camouflaged as time deposits may continue under the new law as before. In regard to this matter and others the Comptroller of the Currency in his *Annual Report* of 1933 made numerous suggestions for amendment, some dealing with mere technical details, but others of considerable importance.

16. OTHER PROVISIONS OF THE BANKING ACT OF 1933

Provisions of the Banking Act of 1933 not emphasized in the foregoing pages include the following:

Net earnings of federal reserve banks in excess of dividend claims are no longer to be paid to the United States as a franchise tax, but are to be paid into surplus. This provision is an offset to the requirements of the new Banking Act that the reserve banks pay half of their existing surplus into the insurance fund in exchange for non-dividend-paying stock.

Morris Plan banks and other similar institutions are made eligible for membership in the Federal Reserve System. Mutual savings banks, too, may become members of the Federal Reserve System if they have a surplus and undivided-profits account of not less than the amount of capital required for the organization of a national bank in the place in which they are located. Such banks must subscribe to the capital stock of the reserve bank an amount equal to six tenths of one per cent of their total deposit liabilities.

A Federal Open-Market Committee, consisting of one member representing each federal reserve bank, is created, and is to meet at least quarterly in Washington. No federal reserve bank shall engage in open-market operations except in accordance with regulations adopted by the Federal Reserve Board. This provision grew out of the difficulties which sometimes arose from divergent open-market policies of the different federal reserve banks. There had been, however, co-operation among the leading reserve banks in this matter for several years.

CHAPTER XXIX

OUR NEW MONETARY SYSTEM

1. THE GOLD RESERVE ACT OF 1934

Our new monetary system formally and officially came into existence with the enactment of the Gold Reserve Act of January 30, 1934, and the proclamation of the President on January 31, reducing the weight of the gold dollar. But both the Gold Reserve Act and the devaluation proclamation had been foreshadowed by monetary developments during the preceding eleven months, and in large measure this act and this proclamation merely placed the seal of definite governmental approval on what had already been, less formally, accomplished. That such an act would sooner or later be passed and such a proclamation issued had for some time been taken for granted and their terms were approximately what had been expected. They were not surprise measures, and consequently caused no great financial disturbance either at home or abroad.

The most significant provisions of the Gold Reserve Act may be stated briefly as follows:

1. Legal title to all gold coin and bullion held by the federal reserve banks was transferred to the United States. In exchange for their gold the reserve banks were to receive gold certificates to the amount of one dollar for each gold dollar of 23.22 grains of fine gold.

2. Federal reserve notes previously redeemable upon demand in gold were made redeemable only in lawful money, not including gold, except under special circumstances.

3. The minimum cash reserve requirements of the federal reserve banks were changed as follows: Instead of a reserve of 35 per cent in gold or lawful money against deposits, they were now required to hold 35 per cent in gold certificates or lawful money; and instead of a 40 per cent reserve in gold against federal reserve notes, they were now required to hold 40 per cent in gold certificates. Instead of a gold redemption fund of 5 per cent maintained in the United States Treasury against federal reserve notes, they were now required to maintain an equivalent gold certificate redemption fund. This fund as before could be counted as part of the 40 per cent reserve against federal reserve notes.

4. No gold shall hereafter be coined and no gold coin shall be paid

out or delivered by the United States. All gold coin of the United States shall be withdrawn from circulation, and, together with all other gold owned by the United States, shall be formed into gold bars.

5. No currency of the United States shall be redeemed in gold except to the extent permitted in regulations which may be issued by the Secretary of the Treasury with the approval of the President, under the provisions of this Act. It is provided, however, that gold certificates owned by the federal reserve banks shall be redeemed at such times and in such amounts as, in the judgment of the Secretary of the Treasury, are necessary to maintain the equal purchasing power of every kind of currency in the United States.

6. The provision of the Act of Congress of May 12, 1933, authorizing the President by proclamation to reduce the weight of the gold dollar by not more than 50 per cent was amended to the effect that in no event should the weight of the gold dollar be fixed at more than 60 per cent of its present weight. The effect of this provision was to authorize the President to reduce the weight of the gold dollar to any point between 50 and 60 per cent of its old weight, namely, 23.22 grains of fine gold, or 25.8 grains of gold nine tenths fine. The increase resulting from the devaluation of the dollar in the dollar value of the gold held by the United States as security for gold certificates or as reserve against United States notes and treasury notes of 1890 was to be covered into the Treasury as a miscellaneous receipt. In the event of a subsequent increase in the weight of the gold dollar the Treasury would suffer a corresponding loss.

7. A reserve for United States notes and for treasury notes of 1890 shall be maintained in gold bullion equal to the dollar amounts required by law, and the gold certificates shall be secured at their face value in gold bullion. The effect of this provision was of course to reduce the gold reserve required for gold certificates and the United States notes, in proportion to the devaluation of the dollar.

8. With the approval of the President the Secretary of the Treasury may purchase gold in any amounts at home and abroad at such rates and upon such terms as he may deem most advantageous to the public interest. He may also sell gold in any amounts at home and abroad, provided, however, that he may sell the gold which is required to be maintained as a reserve or as security for currency issued by the United States only to the extent necessary to maintain such currency at a parity with the gold dollar.

9. For the purpose of stabilizing the exchange value of the dollar, the Secretary of the Treasury, with the approval of the President, directly

or through such agencies as he may designate, is authorized to deal in gold and foreign exchange and such other instruments of credit and securities as he may deem necessary. To enable the Secretary to carry out this provision of the law there was to be appropriated out of the profits of the devaluation of the dollar the sum of \$2,000,000,000. This huge stabilization fund was placed under the exclusive control of the Secretary of the Treasury to be used at his discretion and with the approval of the President. Such portions of the fund as are not currently required in stabilizing the exchange value of the dollar may be invested in United States bonds and notes.

10. The Gold Reserve Act contains also some provisions in respect to the coinage of silver, but these will be described in a later section of this chapter dealing with the silver question.

2. THE DEVALUATION PROCLAMATION AND THE NEW MINT PRICE OF GOLD

The day following his approval of the Gold Reserve Act, the President, acting under the powers conferred upon him by that Act and by the Thomas amendment to the Farm Relief Act of May 12, 1933 (the so-called Inflation Bill discussed in the preceding chapter), issued a proclamation fixing the weight of the gold dollar at $15\frac{5}{16}$ grains nine tenths fine, or 59.06 per cent of the former weight of 25.8 grains. This made the fine gold content of the dollar 13.71 grains as compared with the old weight of 23.22. The new gold content of the dollar became effective immediately on the signing of the proclamation by the President.

In his proclamation the President gave notice that he reserved the right to alter the weight of the dollar as the public interest might seem to require. Under the provisions of the law, as already stated, he had the power to vary the weight as he saw fit from a minimum of 50 per cent to a maximum of 60 per cent of the former weight. Since he had fixed the weight in his proclamation very near the maximum permitted, he could as a practical matter vary the weight substantially only by reducing it.

Following the devaluation proclamation, the Secretary of the Treasury, with the approval of the President, announced that beginning February 1, 1934, he would buy through the Federal Reserve Bank of New York as fiscal agent, for the account of the United States, any and all gold delivered to any United States mints or at the assay offices in New York or Seattle, at the rate of \$35 an ounce of fine gold, less the usual mint charges and less one fourth of one per cent for handling charges. No gold would be purchased at these rates, however, which

had been held in non-compliance with previous Acts or orders or in non-compliance with the Gold Reserve Act.

The mints were authorized also to sell gold to persons licensed to acquire it for use in the industries, professions, or arts, but not to sell more than required for a three months' supply for the purchaser. The selling price at the mint was fixed at \$35 per fine ounce plus one fourth of one per cent.

3. THE NATURE OF THE NEW GOLD STANDARD

It will be convenient to consider at this point the nature of the new gold standard established by the Gold Reserve Act. The new system has been officially and unofficially described as an *international gold bullion standard* to distinguish it from the orthodox international gold standard almost universally in use before the World War. Our new system differs, however, not only from the old-fashioned gold standard, but also from the gold bullion standard and the gold exchange standards established by various European countries after the War, and the gold exchange standards employed by a few countries before the War. It is important that the differences between these various standards be understood.

Before the World War a country was generally considered by economists to be on the gold standard when its unit of value consisted of a fixed amount of gold of a definite degree of fineness, such as our gold dollar of 25.8 grains nine tenths fine; when its standard gold money was permitted to circulate freely in the form of gold coin; when all its other kinds of money were redeemable on demand in gold coin or gold bullion; and when gold might be imported or exported by bankers and others without legal restrictions. A country was still considered to be on the gold standard, even though like the United States it coined silver money with legal-tender powers or had legal-tender paper money outstanding; if these other types of money were directly or indirectly and without trouble redeemable in gold coin, as they might be when issued only in limited amounts. Temporary suspension of cash payments by the banks, as in our panic of 1893 or 1907, did not constitute a departure from the gold standard so long as it was recognized as just a temporary phenomenon and the Government itself did not default on its obligations to pay in gold.

The difference between the orthodox gold standard as just described and the gold bullion standard, such as was adopted by England in 1925 and by France in 1928 and by various other European countries after the World War, is that under the gold bullion standard the Government

undertakes to economize gold by keeping gold coins out of common circulation. The British Gold Standard Act of 1925, under which England returned to the gold standard after having been on a paper basis since 1914, did not forbid the redemption of bank notes in gold coin; it merely gave the Bank of England the option of redemption in gold bars instead of in gold coin, and of refusing redemption in amounts of less than 400 ounces in gold. Similarly the French monetary law of June, 1928, under which France returned to the gold standard with a devaluated franc, did not forbid the redemption of bank notes in gold, but gave the Bank of France the option of redeeming its notes in gold bars or gold coin, and gave it authority to refuse redemption in gold coin in small amounts. The purpose of these laws in England and France was not to make the central bank or the Government the sole custodian and owner of all the gold in the country, but rather to make it easier for the central banks to build up large gold reserves by preventing the dissipation of these reserves in small hoards or in the channels of circulation. In those countries it did not become unlawful to hold gold in any form without special permission of the Government.

The gold exchange standard employed by many nations, either alone or in conjunction with the gold bullion standard, primarily after the War, but in some cases before, represented another device to economize gold and not a device to monopolize gold in the hands of the Government. The essence of the gold exchange standard is that, in the absence of a sufficient stock of gold coin or bullion within a country, its money of other kinds is made redeemable in bills of exchange drawn on banks in gold standard countries. In a country with a gold exchange standard the central bank does not need a gold reserve at all; it needs only a deposit, against which it can draw drafts, in one or more banks in gold standard countries. Having once built up such a deposit reserve in a foreign financial center, the central bank of the gold exchange standard country can maintain it only as a result of such governmental control over imports and exports as will prevent an unfavorable balance of payments. If the bank is called upon to sell more drafts payable out of its foreign reserve than it buys, it will soon, like any other international banker under such circumstances, exhaust its foreign balance. If a proper balance of international payments is maintained, the foreign exchange rate between the gold exchange standard country and the gold standard country will remain approximately at par, and the paper currency of the former will therefore also remain at par with gold at the rate originally fixed. The gold exchange standard, like the gold bullion standard, economizes gold by restraining its use in the form of gold coin

in common circulation. But it offers a further economy to the central bank. This bank need not maintain its foreign reserve exclusively as a cash balance, in the form, for example, of "earmarked" gold in its foreign correspondent bank. If its balance assumes considerable proportions, most of it can be invested in earning assets, such as bankers' acceptances or other short-term commercial paper, to be converted into cash balances only as needed.

The gold exchange standard does not necessarily involve any restriction on the imports or exports of gold, and individuals may be able to obtain gold by converting their domestic currency into foreign exchange and then converting this foreign exchange into gold in the gold standard country on which it is drawn. Gold so obtained will of course be in the form of gold bullion or foreign coins, and not suitable as money for domestic use.

The international trade relations of a country are not necessarily affected by its substitution of the gold bullion standard for the gold standard. In either case an excess of international payments to be made over payments to be received leads to an export of gold, which if continued will exhaust its gold supply, reduce it to a paper standard and result in the depreciation of the foreign exchange value of its currency. Similar considerations apply in the case of the gold exchange standard country. Here we start with a currency irredeemable in gold at home, but maintained on a parity with foreign gold currencies by redemption in foreign exchange at par. In this case excess of international payments to be made over payments to be received instead of leading to exports of gold results in exhaustion of the central bank's foreign reserve. When this is exhausted and demand for exchange still exceeds supply, the rate drops — the international exchange value of the country's currency depreciates. Neither the gold bullion standard nor the gold exchange standard can be maintained, any more than can the orthodox gold standard, in a country which embarks on extravagant inflation of its government paper money, bank-note currency or bank deposits, with a resultant internal rise in prices and an unfavorable balance of international payments.

Consider now in what respects our new gold standard differs from the three types of gold standard just discussed. Obviously it differs radically from the orthodox gold standard. The acquisition, possession, transportation, and treatment of gold is strictly controlled by the Gold Reserve Act and presidential proclamations and treasury regulations issued under this act. More specifically, Section 3 of the Gold Reserve Act authorizes the Secretary of the Treasury to prescribe the conditions

under which gold may be "acquired and held, transported, melted or treated, imported, exported, or earmarked: (a) for industrial, professional, and artistic use; (b) by the federal reserve banks for the purpose of settling international balances; and, (c) for such other purposes as in his judgment are not inconsistent with the purposes of this act."

Gold acquired, held, transported, melted, imported, or exported in violation of the Gold Reserve Act or of any regulation issued under it, subjects the guilty party not only to the forfeiture of such gold, but also to a penalty of twice the value of the gold in respect to which the penalty has been incurred. In short, under the Gold Reserve Act the United States becomes the exclusive custodian and owner of all gold in the country except such limited quantities as may be held by others in the form of rare coins, and for use in industry and the arts, and by the federal reserve banks in the settlement of international trade balances. There is to be no gold coin in circulation; no free convertibility of other kinds of currency into gold; no unrestricted importation and exportation of gold. Even those clauses of the law indicating that gold might be sold or paid out as a means of maintaining the equal purchasing power of every kind of currency in the United States cannot be interpreted as indicating a purpose of paying out gold freely to individuals. Other clauses of the law, as well as the message delivered to Congress by the President on January 15, indicate that this is not to be done. In this connection the following quotation from this message is of interest:

Certain lessons seem clear. For example, the free circulation of gold coins is unnecessary, leads to hoarding, and tends to a possible weakening of national financial structures in times of emergency. The practice of transferring gold from one individual to another or from the Government to an individual within a nation is not only unnecessary but it is in every way undesirable. The transfer of gold in bulk is essential only for the payment of international trade balances.

Therefore it is a prudent step to vest in the government of a nation the title to and possession of all monetary gold within its boundaries and to keep that gold in the form of bullion rather than in coin.

It is impossible to escape the conclusion that it is the intention of the Government to reduce to a minimum the ownership of gold by others than the Government. Our monetary system is to be organized on a basis radically different from what has ordinarily been understood by the gold bullion or the gold exchange standard. Except for the danger of being suspected of irony, one might refer to it as the *inconvertible paper money gold standard*. Concerning the difficulties that may be encountered in maintaining the equal purchasing power of all kinds of

currency in the United States without making the paper money convertible on demand in gold, something will be said in a later section.

4. MONETARY DEVELOPMENTS FROM MARCH 4, 1933, TO JANUARY 30, 1934

Before discussing the purposes, the theoretical aspects and the probable consequences of the new monetary system, it will be advisable to review briefly monetary developments in the United States from March, 1933, to January, 1934. It should perhaps be stated at the outset that because of these prior developments the change made in our monetary system by the Gold Reserve Act and the devaluation proclamation was not a change from an orthodox gold standard system with a gold dollar of 23.22 grains to an "international gold bullion" standard, with a gold dollar of 13.71 grains. Rather it was a change from an inconvertible paper money standard with an uncertain and fluctuating international exchange value, a paper dollar which during the month of January had fluctuated around 63 per cent of par in terms of foreign gold currencies. The actual devaluation of January 31 was, then, not approximately 41 per cent, but only about 4 per cent of the old par value.

As observed in the preceding chapter, the date of our abandonment of the gold standard is difficult to fix exactly, because the process of abandonment involved several steps taken at different times. The process began with the President's proclamation of a bank holiday on March 6, 1933, which suspended the redemption of federal reserve notes in gold, thereby reducing them to the status of inconvertible paper money. A second important step was taken when by his order of April 5, 1933, the President required all persons to deliver all gold coin, gold bullion, and gold certificates held by them to the federal reserve banks. More significant from the international point of view was the embargo placed on gold exports by the President on April 20, 1933. These three steps combined really marked the completion of the process of abandoning the gold standard, but there was always the possibility that the orders of the President relating to the private possession and export of gold might be rescinded, and that after the acute emergency was over the old gold standard might be restored. The prospect of the restoration of the old system was lessened considerably by the passage on May 12, 1933, of the Inflation Bill, authorizing the President to inflate the currency by means of greenbacks and federal reserve notes, to restore the free and unlimited coinage of silver, and to reduce the weight of the gold dollar to a minimum of 50 per cent of the present weight.

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This Act indicated plainly that Congress did not favor a return to the gold standard with a dollar of 23.22 grains, but favored instead either a devaluation of the gold dollar, a silver standard, or a paper standard, obviously with the intention of raising prices by depreciating the currency. Its intention in this respect was made even plainer by the Joint Resolution of June 5, 1933, nullifying the gold clause in debt contracts, including obligations of the United States Government.

The net result of these various orders and Acts of Congress was to convince most persons that there would be no return to the old gold standard, and that the most which might be hoped for by conservative monetary theorists would be a restoration of the gold standard with some considerable degree of devaluation of the unit — the expectation ranging from a valuation as low as 50 per cent to one as high as 70 per cent of par. Some feared unlimited inflation of the currency and depreciation of the dollar through the unrestricted issue of paper money, but this fear of unlimited inflation at no time became very pronounced. The effects of these developments can be observed in the foreign exchange value of the dollar which now reflected the hopes and fears of the inflationists and anti-inflationists, and of the general run of speculators in exchange rather than the ordinary demand and supply of dollar exchange resulting from normal international payments.

When the fear of inflation or devaluation grew, the demand for foreign exchange — particularly the demand for pounds and francs — increased, and the rate of exchange on London and Paris rose. In part this increased demand represented a "flight from the dollar." Timid or calculating persons purchasing foreign exchange with their cash resources expected in this way to protect themselves from a depreciating dollar. Once this depreciation had occurred, they might hope to buy back their dollars at a much reduced rate and thus largely increase their capital. In case prices of commodities and stocks in the United States rose as much as foreign exchange rose, nothing could in the end be gained by this process of "expatriating" and then "repatriating" capital if stocks and commodities were sold as a means of obtaining the funds to be transferred. But a clear gain might be realized by selling high-grade bonds, or by transferring idle cash on hand.

Another aspect of this flight from the dollar was represented by the device said to have been employed by some exporters of leaving the proceeds of their sales on deposit in foreign banks pending the process of devaluation of the dollar. With a subsequent rise in the rate of foreign exchange the foreign deposits would yield more dollars when finally brought home by the process of drawing drafts against them at

the higher rate of exchange. This plan affected the rate of exchange, not by increasing the demand for foreign exchange, but by temporarily reducing the supply.

The rate of exchange was also influenced by the speculators in exchange as distinguished from those persons who were deliberately transferring their liquid capital to foreign countries, or liquidating their fixed investments in order that the proceeds could be transferred. The speculators bought exchange for the rise or sold it short just as they might engage in similar operations in the stock and commodity markets. When they considered the rate higher than circumstances warranted, they sold pounds and francs; when they thought the rate was lower than justified, they bought. All these operations combined—the flight-from-the-dollar-operations, the speculative operations, and the buying and selling growing out of ordinary foreign trade transactions—resulted in a fluctuating rate on pounds, francs, and other foreign currencies, but the general trend was upward from March, 1933, to November, 1933, after which there was a slight decline, as may be observed from the following table showing the rates month by month on the gold standard countries of France and the Netherlands and on England.

TABLE XXXV. FOREIGN EXCHANGE RATES *

(Average of daily quotations based on noon buying rates for cable transfers in New York
In cents per unit of foreign currency)

Year and Month		England (pound)	France (franc)	Netherlands (florin)
1933	February.....	312.21	3.92	40.27
	March.....	343.28	3.94	40.36
	April.....	357.93	4.10	41.95
	May.....	393.24	4.59	46.95
	June.....	413.56	4.80	49.01
	July.....	464.99	5.46	56.18
	August.....	450.27	5.37	55.38
	September.....	466.47	5.77	59.88
	October.....	466.83	5.82	59.96
	November.....	514.97	6.27	64.56
	December.....	511.59	6.12	62.85
1934	January.....	504.93	6.21	63.62
	February.....	503.26	6.46	66.04
Par of exchange:				
Before January 31.....		486.66	3.92	40.20
After January 31.....		523.97	6.63	68.06

* Federal Reserve Bulletin, March, 1934.

It may be observed that by November, 1933, the gold franc and florin had risen in price to a point much nearer the new par than the old par of

exchange, and that it required only a comparatively small further rise to bring them up to the new par established by the devaluation proclamation of January 31, 1931.

It is of interest to observe the effects of the earlier steps in the program of departing from the gold standard. The declaration of the bank holiday on March 6, 1933, had comparatively little effect on foreign exchange rates. For example, the buying rates in New York of cable transfers of French francs, as certified by the federal reserve banks to the Treasury, ranged in the week ending March 17 from a low of 3.92 to a high of 3.95 — a maximum premium above par of less than one per cent. The foreign exchange markets likewise practically ignored the President's order of April 5, requiring the delivery of gold to the federal reserve banks. In the week ending April 7, cable transfer rates for francs remained at approximately 3.93 all week.

A marked rise in exchange rates occurred, however, at the time the embargo was placed on gold exports. On April 18, two days before the embargo order was issued, the cable rate on francs was 3.98. On April 19, it rose to 4.16, and on April 20, the day the order was issued, it jumped to 4.38, from which point it receded to 4.31 on the next day. Similar movements occurred in other exchange rates.

The Inflation Bill of May 12 either did not impress the foreign exchange market as significant or else its effect had been discounted before it was passed. In any event, the franc actually declined in the week following May 12, from 4.62 on May 11, to 4.51 on May 19. On the other hand, the franc rose from 4.67 on June 5, the date of passage of the gold-clause nullifying resolution of Congress, to 4.81 three days later.

5. ESTABLISHING A GOVERNMENT MARKET FOR GOLD

A further important monetary development in the United States in 1933 was the establishment of a government market for gold in accordance with an announcement made by the President in a radio address delivered on October 22. Even more significant than the operations of this gold market turned out to be were the remarks of the President in this address relating to the monetary policy of the Government in general. On this point he said in part:

Finally, I repeat what I have said on many occasions, that ever since last March the definite policy of the Government has been to restore commodity price levels. The object has been the attainment of such a level as will enable agriculture and industry once more to give work to the unemployed. It has been to make possible the payment of public and private debts more nearly at the price level at which they were incurred. It has been gradually to restore a balance in the price structure so that farmers may exchange their

products for the products of industry on a fairer exchange basis. It has been and is also the purpose to prevent prices from rising beyond the point necessary to attain these ends.

In respect to revaluation and control of the gold value of the dollar he said:

Some people are putting the cart before the horse. They want a permanent revaluation of the dollar first. It is the Government's policy to restore the price level first. I would not know, and no one else could tell, just what the permanent valuation of the dollar will be. To guess at a permanent valuation now would certainly require later changes caused by later facts.

When we have restored the price level, we shall seek to establish and maintain a dollar which will not change in purchasing and debt-paying power during the succeeding generation....

Because of conditions in this country and because of events beyond our control in other parts of the world, it becomes increasingly important to develop and apply the further measures which may be necessary from time to time to control the gold value of our own dollar at home.

Our dollar is now altogether too greatly influenced by the accidents of international trade, by the internal policies of other nations, and by political disturbances in other continents. Therefore the United States must take firmly in its own hands the control of the gold value of our dollar. This is necessary in order to prevent dollar disturbances from swinging us away from our ultimate goal, namely, the continued recovery of our commodity prices.

As a further effective means to this end, I am going to establish a Government market for gold in the United States. Therefore, under the clearly defined authority of existing law, I am authorizing the Reconstruction Finance Corporation to buy gold newly mined in the United States at prices to be determined from time to time after consultation with the Secretary of the Treasury and the President. Whenever necessary to the end in view, we shall also buy or sell gold in the world market.

My aim in taking this step is to establish and maintain continuous control.

This is a policy and not an expedient.

It is not to be used merely to offset a temporary fall in prices. We are thus continuing to move toward a managed currency.

In accordance with the President's announcement a gold market was established on October 25, 1933. The Reconstruction Finance Corporation was authorized to buy newly mined gold in the United States at the rate of \$31.36 a fine ounce, and the Federal Reserve Bank of New York was authorized to buy foreign gold for the account of the Reconstruction Finance Corporation after November 1. This gold market continued in operation from October 25, 1933, to January 31, 1934, when it was superseded by the gold-purchase operations established under the Gold Reserve Act. After January 16 the newly mined gold in the United States was purchased by the Federal Reserve Bank of New York for the account of the Treasury. The buying price of gold was raised

almost daily for the first fifteen days, by small amounts, and then raised less frequently until it reached \$34.45 an ounce on January 16. It remained at that level until raised to \$35 by the Secretary of the Treasury on February 1, 1934, under the Gold Reserve Act.

The government price of gold thus established represented a new mint price of gold and, as it was gradually raised, theoretically a progressive devaluation of the international exchange value of the dollar.

It soon became evident, however, that the foreign gold currencies did not rise in terms of our dollar in proportion as the Government raised the price of gold. At the price of \$34.45 cents an ounce for gold, the mint par of French francs was 6.53 cents. But during the period when this price of gold was quoted, the value of the franc remained substantially less than 6.53 cents, the highest quotation for the two weeks ending January 26 having been 6.32, and the average for the month of January, only 6.21. The obvious conclusion to be drawn from these facts is that the Reconstruction Finance Corporation was not buying all the gold offered abroad at the quoted price, and that the quoted price was therefore not an effective price. Had the Government bought all the gold offered, the foreign gold currencies would have risen approximately to the new mint par represented by the new price of gold, for the manifest reason that a lower price of francs, for example, would have permitted speculators to buy francs in the foreign exchange market, convert them into gold in Paris, and sell the gold to the Reconstruction Finance Corporation at a profit.

6. CRITICISM OF THE GOVERNMENT'S MONETARY POLICY AS ANNOUNCED IN OCTOBER

The President's radio address, and the establishment of the gold market under the conditions just described, brought forth a storm of criticism of the monetary policy of the Administration. The most bitter critics caustically criticized the Government for ever having departed from the gold standard at all. They demanded a return to the gold standard and a restoration of the standard gold dollar of 23.22 grains, but they were apparently not opposed to the substitution of the gold bullion standard as applied by France for the orthodox gold standard permitting the unrestricted circulation of gold coin. While admitting that a restoration of higher price levels was to be desired, they denied that a devaluation of the dollar was necessary to bring about a rise in prices. On the contrary, they held that the prime essential to a rise in prices was a recovery in business, and that business would recover with a revival of confidence. Tampering with the currency,

abrogating contracts, partial repudiation of the Government's obligations by paying its debts in smaller units of gold than it borrowed, tended to impair confidence, not to restore it. According to these critics the best way and the natural way out of the depression was represented by the following sequence of events: Restoration of confidence, reviving demand for commodities, increasing industrial production and employment, rising prices and profits of industry, and rising wages. If further deflation of wages, costs of production, and government expenditures should be required before recovery came, it would have to be endured. For those business men, firms, and corporations that could not meet their obligations under this process, there was available the process of bankruptcy or reorganization, and a new start. Devaluation or debasement of the dollar and partial repudiation of debts was not only dishonest and unnecessary, but would inevitably serve as a precedent for similarly dishonest and easy methods of escape from financial difficulties in the future.

Other critics, while deploring the necessity of devaluation of the dollar, regarded it at the time of the October address as an accomplished fact to the extent that the dollar had depreciated in terms of the foreign gold currencies — that is, to about 70 per cent of its par value. But they urged that the gold standard be at once restored with a dollar of around two thirds its former weight. They were alarmed at the President's reference to a dollar with an unchanging purchasing and debt-paying power, which implied a managed currency, and possibly the so-called compensated, or commodity dollar, long advocated by Irving Fisher. The compensated dollar is a dollar varying in weight but constant in purchasing power as contrasted with the dollar to which we have been accustomed which is constant in weight and varies in purchasing power.

Briefly described, the plan of price control with the compensated dollar is as follows:

Assuming that a desired level of prices has been attained in terms of gold dollars and is to be made permanent, a rise in prices, as indicated by an index number of prices, is checked by increasing the weight of the dollar, and a fall in prices is checked by reducing the weight of the dollar. Under this plan gold itself would not circulate, but would be held in the Treasury, and only gold certificates would circulate. These certificates would then become claims to amounts of gold varying from time to time, as the Government decreed. The theoretical basis of the compensated dollar is the quantity theory of money rather than the commodity value of gold. That is to say, making the dollar smaller would not make

it less valuable and prices higher merely because there was less gold in the dollar, but because it would make the number of dollars and the quantity of bank credit based upon these dollars greater. The process would be worked out according to the theory represented by the equation of exchange, $MV + M'V' = PT$, discussed in detail in Chapter IV and frequently referred to in other parts of this book.

Through his persistent and able advocacy of the plan, Professor Fisher had, during the years immediately preceding the establishment of the Federal Reserve System, persuaded a great many economists to view the compensated dollar with considerable favor, and many believed that it would prove to be an effective instrument of stabilizing prices if applied. It was, however, at the same time strongly opposed by economists who did not believe that there was a fixed relation between the quantity of money and prices, or the price of gold and commodity prices, and it was opposed also on the ground that, even if it did stabilize the average level of prices, it could not stabilize individual prices, some of which would go up while others went down. It was also pronounced by many to be objectionable because it would give the dollar a fluctuating international exchange value — its value in foreign gold currencies, of course, fluctuating directly with the quantity of gold it contained.

After the establishment of the Federal Reserve System, the notion of stabilizing prices by varying the gold content of the dollar was displaced in the United States by the notion of stabilization through expansion or contraction of bank credit through the rediscount and open-market operations of the federal reserve banks. Most economists would give some sort of qualified approval to a policy of stabilizing prices by means of control of bank credit through central banking operations, but there is a great deal of skepticism as to the ability of central banks firmly to control even the general level of prices in this way, let alone individual prices, some of which may be going up, while others are going down for reasons independent of the amount of money and bank credit. As to the possibilities of such price control, something has been said in Chapter IV and elsewhere in this book, and some additional remarks will be made in later pages of this chapter. In conclusion on this point, it may be said that, if the President planned to adopt the device of a managed currency, he could count upon more support and less opposition from the more orthodox economists, if the management, that is, the price-stabilization process, was exercised through credit control by the banks, than if the management took the form of varying the gold content of the dollar indefinitely. It is probable that he and his advisers

had this fact in mind when the new monetary policy represented by the Gold Reserve Act and the devaluation proclamation was put into effect.

7. PURPOSES OF THE GOLD RESERVE ACT

We may return now from our digression on monetary developments during 1933 to a consideration of the Gold Reserve Act of 1934 — its purposes, its theoretical basis, and its probable consequences.

The primary purpose of the Gold Reserve Act was to establish a monetary system which would make possible the restoration of the price level to approximately the level of 1926, and at the same time permit an increase in the prices of the chief agricultural products somewhat greater than the increase in the general level of prices. The special purpose in view in respect to agricultural prices was important because, as we shall see a little later, it precluded from consideration various methods of raising prices which might otherwise have been considered. The general rise in prices would make easier the payment of public and private debts which had been incurred at higher levels of prices, and the special rise in agricultural prices would tend to remove the handicap under which farmers had been laboring for many years by restoring something like the pre-war relation between their prices and other prices. The disproportionate decline of agricultural prices in the post-war deflation and the great deflation of 1929–1933 has been noted in earlier chapters.

The devaluation of the dollar and the provisions of the law making the Government the exclusive owner and custodian of the country's gold supply were designed to increase the monetary gold reserves on the basis of which the currency and bank credit could be expanded to the extent required to support the desired level of prices, and at the same time maintain the gold standard. In short, the President wanted a sound and adequate currency.

Seizure of the total supply of gold in the country by the Government, including the gold of the federal reserve banks, served also another important purpose. It permitted the Government rather than private owners to enjoy the profits arising from devaluation, amounting in the aggregate to 41 per cent of the total stock of gold in the country, which was at the time of devaluation more than \$4,000,000,000. The actual profit realized by the Government from the gold held by it was stated by the Treasury on February 1 at \$2,805,512,000, new style. After setting aside \$2,000,000,000 of this amount, as provided by the Gold Reserve Act for the foreign exchange stabilization fund, there was left available for other government purposes \$805,512,000.

The stabilization fund was presumably intended to be used to main-

tain the dollar at its new parity with foreign gold currencies, particularly the French franc, and at some desired ratio to the foreign paper currencies, particularly the pound sterling. When the dollar rises higher in terms of such currencies than desired, the fund will be used to buy the foreign currencies; when the dollar falls too low, foreign currencies will be sold. The dollar may also be depressed by buying gold with dollars in the foreign markets, or raised in price by selling gold with dollars for dollar exchange. The Treasury in applying the fund for such purposes need not itself directly enter the foreign exchange or gold markets. It may merely offer to buy and sell gold at the mint price through the Federal Reserve Bank of New York, and leave the actual transactions abroad to the private initiative of foreign exchange bankers.

If, for example, the French franc is substantially below the mint par of 6.63 cents, and New York bankers can sell gold to the Federal Reserve Bank of New York at \$35 an ounce, they can make good profits by buying francs, converting them into gold in Paris at a cost of substantially less than \$35 an ounce, and selling the gold thus purchased and imported to the reserve bank. Similarly they might make profits by exporting gold bought from the reserve bank at \$35 if the franc rose much above par, provided the Government gave them permission to export the gold. By such operations as these and related operations, the Secretary of the Treasury with his huge stabilization fund can maintain the value of the dollar in terms of foreign currencies both of countries on the gold standard and off the gold standard at any desired level within reasonable limits.

Through such operations a considerable degree of control over imports and exports of commodities may be exercised. For example, raising the rate of exchange on Paris, and thus making francs cost more in New York or dollars less in Paris, will tend to increase the cost of imports of French goods to New York importers and thus to reduce the quantity of such goods imported, and it will tend to reduce the cost of American goods to French importers, thus tending to increase our exports to France. This is on the supposition that internal prices remain the same in both countries and only the rate of exchange varies. If prices in the United States rise in proportion to the increase in the franc or the decline in the dollar, the cost of American goods to the French will not be reduced, and no increase in exports will tend to take place. Since it is the avowed purpose of the devaluation of the dollar, with the accompanying rise in foreign exchange rates, to raise prices in the United States, it is apparent that the object of devaluation cannot also be, except perhaps in an incidental way, to increase the volume of our exports or to restrict imports.

8. CRITICISM OF THE DEVALUATION PLAN

Economists were in agreement that a general rise in prices was desirable from the low levels prevailing in 1932 and early 1933, and in pretty general agreement, too, that agricultural prices were too low in relation to other prices. Few took exception, then, to the President's purpose of raising prices in general and of raising agricultural prices more than the average. Two questions were raised, however, in respect to the devaluation plan: First, would his plan bring the desired results? Second, would not some less drastic and, from the orthodox point of view, some more honest plan be just as effective or even more effective? These questions deserve careful consideration.

Many reputable economists were firmly convinced of two things in respect to the devaluation plan: first, that if other conditions favorable to business recovery developed, prices would naturally rise without any tinkering with the currency; secondly, that if other conditions favoring business recovery and a rise in prices did not develop, no tinkering with the currency short of reckless issue of paper money and its wholesale distribution among consumers of goods would bring a rise in prices. As already indicated, these critics believed that the depression was not primarily a monetary affair, but that it was caused by a variety of other factors, the correction of which alone would bring recovery. Many of them had a sort of puritanical point of view: the people had sinned in an orgy of gambling, speculation, greed, and extravagance. They were paying for their sins in the pains of liquidation, deflation, and depression. When their debts, moral and financial, were paid, or compounded, recovery would be possible. The nations likewise had sinned in warring upon one another, and in fighting a war after the war in the guise of selfish restrictions on international trade. When they made peace, and not before, they would prosper.

These critics scoffed at the notion that the depression either in the United States or the world at large was the result of a shortage of the gold supply, or could be ended by artificially increasing the gold supply — in units of value — by the process of devaluation. There was more gold in the world in 1933 than in 1929, and practically as much in the United States. While there had been in the United States a substantial decline in bank deposits and in bank loans and investments from the boom period of 1929, the existing bank deposits plus the money in circulation would permit a substantial rise in prices. The low demand for commodities, the lack of purchasing power, was not the result of a shortage of currency and bank credit. It was a result of lack of con-

fidence, unemployment, business stagnation. Something might be required to break the vicious circle of the depression, but whether so or not, increasing the supply of money and bank credit was not the something required. Not only were there already bank deposits proportionately greater than the degree of business activity, but there existed a

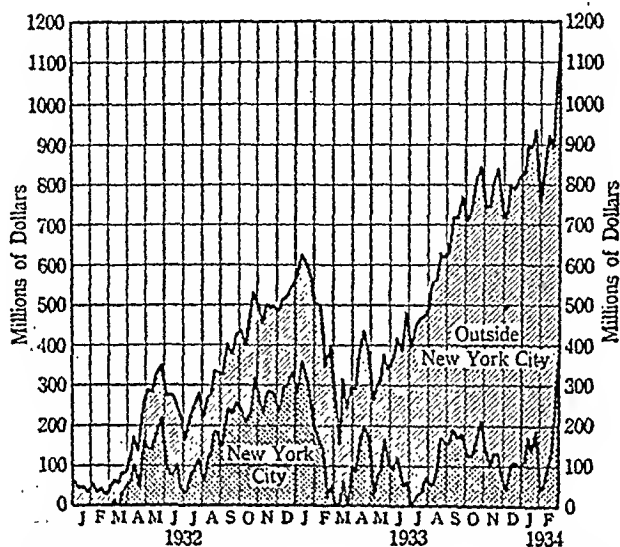


CHART XVII. EXCESS RESERVES OF MEMBER BANKS

From the *Federal Reserve Bulletin*, March, 1934.

enormous potential source of bank-credit expansion in the huge excess reserves of the member banks, greater in the last half of 1933 than at any other time in history. (See Chart XVII.) If the existing superabundant bank credit could not start prices rising, what reason was there for holding that adding to the superfluity would bring better results?

9. THE WARREN THEORY OF PRICES

Diametrically opposed to the view of these critics of the Administration's monetary policy was the view of Professor George F. Warren, one of the most influential monetary advisers of the President. As early as 1918, Professor Warren, as a result of his study of monetary statistics, had concluded that the world stock of monetary gold was not sufficient to sustain a price level above the pre-war level, provided the leading nations of the world undertook to re-establish the gold standard with their old units of value.

The statistical basis of Warren's theory is the relation between the total monetary stocks of gold and annual gold production on the one hand and the physical volume of production and the commodity price level on the other. In his book on *Prices*,¹ written in collaboration with F. A. Pearson, Warren states that their statistical studies have shown that for seventy years before the War any period in which yearly gold production did not equal 5.6 per cent of monetary stocks was usually followed by a period of falling commodity prices. During this period the production of commodities was rising at about 3.15 per cent a year. A 5.6 per cent production of gold was sufficient to provide for industrial uses and to increase monetary stocks rapidly enough to support the price level. Other writers, including Cassel and Kitchin, had come to the similar conclusion that any period in the seventy-five years before the War in which world monetary stocks did not increase a little more than three per cent was a period of falling commodity prices.

During the period from 1914 to 1928, according to the statistics compiled by Warren and Pearson, world monetary stocks of gold increased 38 per cent and the physical volume of production also increased 38 per cent. If the pre-war relation between gold production, physical volume of production, and commodity prices had held, there would have been no substantial change in prices during this period. During the War, however, most of the leading nations of the world abandoned the gold standard, and their prices in paper money mounted skyward. At the same time much of the gold they had held flowed to the countries remaining on the gold standard and permitted a great rise of prices in terms of their gold currencies.

The course of prices in the United States during these years has been discussed in earlier chapters and need not be considered in detail here, but it may be recalled that, after the sharp readjustment of prices during the panic of 1920, commodity prices in this country settled down to a level approximately 50 per cent above pre-war prices. In the world at large the general level of prices in terms of pre-war currencies ranged from 40 to 50 per cent above pre-war levels.

According to the Warren theory this high level of prices to which the world grew accustomed during the early twenties was made possible only by the fact that during these years most of the European countries were not interested in building up gold reserves. When the movement toward a return to the gold standard became general in Europe, the demand for gold increased greatly, the value of gold rose, and a decline in prices toward the pre-war level became inevitable. There was no

¹ Warren and Pearson, *Prices*. John Wiley and Sons, 1933.

warrant in monetary history for believing that a price level 50 per cent above the pre-war level could be supported by a stock of monetary gold which on the pre-war basis would not support even the pre-war level.

Stated baldly, the Warren theory holds that in the long run — that is, over a period of five to ten years or longer — there is a direct relation between the quantity of gold and prices in gold standard countries. In a gold standard country where the currency and bank deposits are convertible into gold, commodity prices can depart from the world ratio of gold to commodities by only a limited amount and for only a limited time. In the different phases of the business cycle it is possible to have a limited and temporary movement in commodity prices away from the gold relationship.

In a sense Warren is a quantity theorist, but his method of approach is not the usual one, and he makes no direct use of the equation of exchange. The value of gold, he says, is determined by its supply and by the demand for it as money and for use in the arts. The use of checks to replace gold currency does not affect the value of gold except that by substitution checks reduce the world demand for gold. A more rapid use of gold enables an ounce of gold to perform more services and so reduces world demand. But price remains the ratio of two values — the value of the commodity to the value of gold. When he recognizes, as indicated in the foregoing statements, that the use of checks, the velocity of circulation, and the supply of commodities all affect the value of gold, and that there is, as he states, a definite limit on the amount of bank credit that can be safely built on gold, he has admitted the substantial truth of the equation of exchange, and used the substance of it in his explanation of the value of gold and the price level. It would seem that his explanation of the value of gold conforms more closely to the equation of exchange explanation than to the simple commodity value theory. Under the latter theory, prices would automatically be doubled overnight simply by reducing the weight of the dollar 50 per cent. That is to say, under the simple commodity theory of the value of gold, a piece of gold weighing 23.22 grains, and worth one bushel of wheat, would still be worth only one bushel of wheat if cut into halves. And if each half were now called a dollar, whereas before the whole had been called a dollar, the price of wheat would have risen from one dollar a bushel to two dollars a bushel. Under the quantity theory of money, however, prices would not tend to double merely as a direct result of reducing the weight of the gold dollar. Before prices would tend to double, there would have to be a doubling of the total amount of money in circulation and a doubling of bank deposits subject to check, a development that could not take place instantaneously.

10. RAISING THE PRICE LEVEL WITHOUT DEVALUATION

Although the gold market project, with its gradually rising price of gold, and the devaluation of the dollar are closely connected in the public mind with the Warren theory of prices, the relation of devaluation to the price level will here be discussed on the basis of the more generally accepted quantity theory of money and the theories of international exchange.

Consider first the dictum of Professor Warren that the present world monetary stock of gold is insufficient to support a price level in pre-war gold currencies above the pre-war level. If we accept as correct Warren's statistics of the increase in the monetary gold stocks and physical volume of production — and it is probable that they are at least approximately correct — it would seem that the quantity theory of money as discussed in our Chapter IV would sustain the Warren point of view. The reader may recall that there the conclusion was reached that in the long run, although not in all the various phases of a business cycle, prices do tend to vary in proportion to the amount of money. From the peak of a period of prosperity to the bottom of a period of depression prices may fall even though the amount of money remains the same, and from the bottom of the depression prices may rise again to their former heights without any expansion in the money supply. But from the peak of one period of prosperity to the next, it was concluded, there could be no substantial rise in prices except as the result of an increase in the quantity of money proportionately greater than the increase in the physical volume of production and trade. But this conclusion was held to be justified only in the absence of fundamental changes in the banking system.

Professor Warren's argument that the present monetary stocks will not support a price level in pre-war gold currencies above the pre-war level is considerably weakened by the fact that there have been important changes both in the banking systems and the monetary systems of the world which tend to make possible a higher gold price level with a given quantity of gold than could have been sustained without these changes. The development of our own Federal Reserve System since 1914, as discussed in detail in earlier chapters, undoubtedly made possible a greater expansion of currency and bank credit on the basis of a given amount of gold than the pre-war National Banking System. Similar developments, although of lesser importance, occurred in various other countries.

Even more important than these changes in the banking system in

their possible effects on the world price level have been the changes made since the World War in control and ownership of the monetary stocks of gold. With gold coin largely withdrawn from common circulation under the gold bullion standard, and the consequent increase in the gold reserves of the central banks, a greater expansion of bank credit is made possible than before. The importance of this development is clearly shown by the following monetary statistics:

In 1913 the total world monetary stock of gold, as estimated in documents of the League of Nations Gold Delegation, was \$8,773,000,000. Of this there was held in reserves of banks of issue \$4,945,000,000, while there was in circulation outside these banks \$3,828,000,000, or approximately 43 per cent of the total. By 1929 the total monetary stock had increased to \$11,179,000,000, of which \$10,423,000,000 was held in the banks of issue, while only \$756,000,000, or less than 8 per cent, remained in circulation. The gold reserves of the banks of issue, on which expansion of bank credits is directly and indirectly based, had increased more than 100 per cent during this period.

Further possibilities of raising the world price level on a gold basis are found in proposals that have been widely made by influential monetary experts to reduce the legally required minimum gold reserves of central banks from 35 to 40 per cent against note issues to the lower level of 20 to 25 per cent. There is, furthermore, the possibility, also widely suggested, but not equally widely accepted, of establishing an international gold reserve, deposited perhaps with the Bank for International Settlements at Basle. This bank would then become a central bank of the central banks of the various nations participating in the plan.

These various developments and proposals may be neither sound nor desirable, but it cannot be denied that they offer potentialities of credit expansion and price inflation with the present stock of monetary gold and without the necessity of devaluation of the gold units of value. There are, however, certain considerations which make some of these means of raising prices appear less desirable than the plan of devaluation, and to these considerations it is worth while to devote a little attention.

In the first place, while these various methods of economizing gold theoretically make a higher level of world prices possible, none of them affords a sound practical basis for a program of price-raising in any one country acting without co-operation of other countries. Should any one country undertake to raise its own price level by expansion of the currency and bank credit made possible by its use of the gold bullion standard, the gold exchange standard, or reduction of its minimum required bank reserves, and should it succeed temporarily in thus raising

prices, the probable result would be an increase in its imports, a decline in its exports, a consequent unfavorable balance of international payments, export of its gold reserves, and depreciation of the international exchange value of its currency. The country might succeed in raising some prices while remaining on a gold basis, but probably not in raising all prices. Prices of goods neither imported nor exported in substantial amounts might be raised. Exportable products could not be raised in price above the world level except by paying export bounties. If prices of imported goods were raised, imports would increase, and if no unfavorable balance of trade were to develop, the price of export goods would have to decline in order to increase exports sufficiently to offset the increase in imports. It is conceivable that by a proper combination of export bounties and import duties, and other regulations of foreign trade, the general level of prices could be raised without discrimination against any particular group of commodities. But the system would be difficult to work at the best and would probably lead to retaliation by other countries which would be antagonized by the restrictions placed upon their exports and by the dumping of this country's commodities at less than cost under the stimulus of the export duties.

As a practical program for the United States, for example, inflation of currency and bank credit without devaluation of the gold unit would permit a rise in the prices of real estate and securities, railroad rates, public utility rates, and the prices of commodities produced by industries not burdened with an exportable surplus. It would not permit a rise in the price of wheat, corn, cotton, and pork, and other important agricultural products so long as there remained an exportable surplus of these products to be exported without benefit of an export bounty, and so long as there was no world-wide rise in prices. The experience of the inflation years of the late twenties supports our deductive reasoning in this case. Such inflation would then succeed only in raising the prices of the things the farmers buy, and not in raising the prices of the things they sell — just the opposite of what the Government has hoped to accomplish by the project of devaluation. These conclusions would of course have to be modified if a price-raising program were made effective in all important countries at the same time. But international co-operation in price regulation has always been singularly ineffective, and will succeed, if it succeeds at all, only after intolerable delay. A country which wants quick results must apparently act alone.

In the second place, the present writer is not convinced that a program of raising prices through international action by such gold-economizing projects as the gold exchange standard, the gold bullion standard, or the

reduction in the cash reserve ratios of banks, is desirable, even though it might temporarily be successful. All these projects have in common the one essential characteristic that they propose to increase the amount of bank notes, government paper money, and bank deposits that can be supported by one dollar in gold, and they have in common also, at least in most cases, the purpose of restricting in some way the free convertibility of other forms of currency into gold, or even in preventing conversion absolutely. The writer adheres to the belief that a gold standard is not a true gold standard when all forms of currency are not freely convertible into gold. Although temporary suspension of gold payment may be expedient and desirable in times of panic, it should not be adopted as a permanent policy and made the basis of currency expansion so great that it could not normally be maintained under a policy of unrestricted gold payments. All these projects tend toward the erection of an unstable inverted pyramid of credit on a narrow base of gold — a pyramid that will be overturned inevitably in every financial storm.

In this connection it is not amiss, perhaps, to present the following quotation from the *Annual Report* of the Bank of France for 1933, issued in January, 1934:

The experience of the year 1933 can, in our opinion, only strengthen the validity of the principles to which we adhere. We remain more than ever convinced that convertibility of the currency into gold is an indispensable condition for sound economic and social discipline.

However attractive may be the artificial expedients which history shows that nations have always been inclined to adopt in a period of crisis, they really bring nothing but illusory or doubtful improvements immediately followed by disappointment. International trade, which in the modern world promotes to so great an extent the wealth of all nations, cannot recover its full vigor until the value of the great currencies is definitely fixed. Monetary stability is thus the most effective means of preparing for the return of lasting prosperity.

11. CRITICISM OF THE INCONVERTIBLE CURRENCY

The writer sees no serious objection to that form of the gold bullion standard, which merely discourages the common use of gold coins in circulation and in hoards, although he believes even this restriction on the free convertibility of the currency into gold will in the long run work more harm than good. But restriction on gold payment to the extent apparently planned by the Gold Reserve Act and the regulations issued under it is open to criticism.

Although the Gold Reserve Act contains a clause providing for the maintenance of the equal purchasing power of all forms of currency in the United States, the severe restrictions on gold redemption of the currency

and on gold imports and exports leave the foreign exchange operations of the Secretary of the Treasury the only effective method of maintaining such parity.

Assuming that some other countries retain the gold standard on a basis permitting the conversion of their currency upon demand into either gold coin or gold bullion, all forms of currency in the United States can be maintained at parity with one another and with gold provided that the Secretary of the Treasury will so use his stabilization fund as to maintain the rate of exchange of our currency at parity with the currencies of those gold standard countries. If, for example, the dollar is maintained at parity with the franc — that is, at 6.63 cents for one franc — and if the rules and regulations of the Secretary of the Treasury permit anyone to buy francs at par with any form of currency in the United States, then all forms of currency will remain at parity with one another and with gold. This is on the principle that things equal to the same thing are equal to each other. If \$6.63 in greenbacks equal 100 francs, and \$6.63 in gold equal 100 francs, then \$6.63 in greenbacks equals \$6.63 in gold.

If, however, our people should grow distrustful of the paper dollars, and, for lack of the power to convert them into gold in the United States, proceed to buy francs with them which could be converted into gold in Paris, difficulties would develop. The increased demand for francs would cause the rate of exchange on Paris to rise above par. That is, our dollars would depreciate in terms of gold francs. The stabilization fund would now have to sell francs to make the supply equal to the demand. But in order to sell drafts on Paris, it either would have to buy drafts on Paris or export gold to maintain a redemption fund in Paris, just as would any other dealer in exchange. If, however, it bought as many drafts as it sold, it would not thereby depress the market rate. Consequently, it would seem that it had no alternative to shipping gold as a means of maintaining the parity of the dollar with the franc — unless, of course, it chose to borrow the necessary funds in Paris. There would be some danger that our Government would thus be compelled to export very large sums of gold unless it rigidly controlled the demand and supply of foreign exchange by control over all imports and exports to the extent that no one could import or export goods, services, or securities without being licensed to do so by the Federal Government. It would be much simpler and sounder to provide for the maintenance of our various kinds of currency on a par with gold by gold redemption — if not in coin, at least in bullion.

It is, perhaps, worth while to consider the problem of maintaining the

parity of all our kinds of currency with gold as it would be presented should France and the remaining countries of the gold bloc adopt a gold standard of the type apparently represented by our Gold Reserve Act, so that in all countries the gold reserves were monopolized by the Governments or the central banks, and no paper currency were redeemable in either gold coin or gold bullion. Under such conditions it would still be possible to maintain our dollar on a parity with the franc, the florin, or other so-called gold currencies, but this would signify nothing as to its parity with gold. In that case all that could be said with assurance about parity would be that a franc was worth 6.63 cents, and that 6.63 cents were worth a franc. There would be no legal method of determining the relation between the value of a gold dollar and a paper dollar, or a gold franc and a paper franc. A bootleg gold market would probably develop at which gold would be bought and sold at a premium in terms of paper money. How high the gold premium would be would depend primarily upon the two factors which always determine in large measure the value of paper money — namely, the quantity of the paper money, and the degree of confidence reposed in it by those who have goods and services for sale. A third factor would, however, now become of importance, and that is the extreme scarcity of gold resulting from the fact that the bulk of the world supply had been deeply buried under ground in the vaults of the government treasuries or central banks. This would make the value of the available gold much higher in terms of other commodities than it otherwise would be.

Under this system we should have what may be called a pure managed currency divorced from gold except for the fact that the Governments would go through the solemn formality of shipping gold back and forth between the government vaults as a supplementary device to maintain the parity of the paper currencies with one another. If the dollar depreciated in terms of the franc, a few truckloads of gold would be exhumed in Washington and buried in Paris — the sole result being an increase in the demand for dollars or a decline in the demand for francs in the foreign exchange market of paper dollars and francs. Or perhaps all the gold would be buried once for all in the vaults of the International Bank of Basle, and only title to a few truckloads would be shipped back and forth to maintain a proper relation between the demand and supply of dollars and francs.

Those who have great faith in the project of a pure managed currency would hold that the internal value of the paper currency of the various nations could be maintained on a parity with gold and with other currencies without the conversion privilege by a proper adjustment of its

quantity and of the quantity of bank credit to the amount required to carry on industry and trade at the desired level of prices. Expansion and contraction of bank credit — more important than the paper money itself — would both be controlled by direct pressure and by the discount rate. That is to say, credit might either be refused outright by central banks to member banks, or be made unattractive by high rates or attractive by low rates.

The present writer has no great confidence in the power of a central bank thus to maintain a given price level, particularly with inconvertible paper money, as the reader may have discerned from earlier pages of this book. It is possible for the Government or a central bank in a given country to permit a desired rise in price by the process of expanding currency and bank credit. But the rise will not take place unless there is the power and the desire on the part of buyers to buy. If a rise gets under way, it tends to run on under its own momentum, since then demand for goods increases as a result of buyers hastening to buy to forestall a further rise. The increased demand quickens business activity, leads to increased employment at higher wages, and generates additional buying power, and higher prices, and so it goes. Under a gold standard system such a rise may be checked either by the exhaustion of the gold reserves or by maladjustments in the relation of prices to one another. Such maladjustments would develop under a managed currency as well as under a gold standard convertible currency, and when the maladjustments became severe the purchasing power of certain groups of buyers would be curtailed, the economic equilibrium would be upset, and industrial activity would decline. Depression would set in, with falling prices. There is no evidence available tending to prove that such a decline in prices and such a depression could be prevented by manipulation of currency and bank credit and discount rates. There is rather a considerable body of evidence tending to prove that once a decline gets under way it cannot be checked promptly by monetary manipulation. The price variations of the business cycle can probably not be prevented by anything the manipulators of a managed currency can do.

If there is a possibility of preventing price changes it lies in stabilizing the price level at some given time when there has been for some years no great movement one way or the other. Under such conditions existing prices would be in fair adjustment with one another, and no great amount of speculation would be taking place with the attendant unsound over-expansion in speculative commitments of various sorts.

Consider the difficulties of the managers of an inconvertible currency in checking a desired rise in prices at some given desired level, let us say

50 per cent above the level prevailing in the depression a short time before, and of then maintaining the price level at that point. The quantity theory of money might seem to lend support to the view that any tendency for prices to rise above the desired level could be checked by restricting the amount of government paper money, bank notes, and bank deposits subject to check. But two great obstacles stand in the way of successful management of an inconvertible currency at this point. First, the Government might not have the courage and the desire to attempt to check the rise by restricting further expansion of the currency. Business men and speculators who had made commitments based on the expectation of a further rise in prices would be infuriated if government action prevented the rise from taking place. Moreover, there would always be the danger that checking a rise in prices would not leave prices stable at that level, but would precipitate a disastrous fall. The reasoning on this point has been elaborated in earlier chapters and need not be repeated here. Such deflation, precipitated intentionally by deliberate action of the Government, would be unprecedented in our monetary history. It is doubtful that any party in power could survive the political storm that would follow.

But there is also the possibility that an attempt actually made to check the rise in prices by contraction of the currency might fail. In the first place, prices depend as much, and in some cases even more, upon the velocity of circulation of money and bank deposits as upon the quantity of the currency. If during the rise in prices business men, investors, speculators, and consumers developed a great faith in a period of prosperity and rising prices ahead, the demand for commodities, securities, and real estate would grow. The rise in prices might gain such momentum, and be fed by such an increase in the velocity of circulation of money and bank deposits, that it would go far beyond what the Government had expected when it fixed its limits on the available quantity of currency and bank credit.

Doubtless a rise depending upon such an increase in velocity of circulation of money and bank deposits could eventually be checked by a severe contraction in currency and credit, provided the people did not lose confidence in the inconvertible paper money. Should confidence in the paper evaporate, however, contraction of the currency would not bring a decline in prices in terms of this currency. Mere scarcity of scraps of paper — if the money came to be esteemed on that basis only — would never make them worth more than scraps of paper. It is conceivable, and the writer believes quite probable, that a flight from such paper currency would develop. If the paper currency were used only in one coun-

try, the flight would be into commodities, stocks, real estate, and into foreign currencies. If the paper system were in world-wide use, the flight would be concentrated into commodities, common stocks, and real estate. Bonds, mortgages, bank deposits, insurance policies, and all other property of this type, would become worthless, and an orgy of speculation in stocks, commodities, and real estate would rage.

It is to be hoped that the Gold Reserve Act will soon be so amended, or that it will be so interpreted by the Administration, that our currency will not remain inconvertible, and that the calamitous consequences of an inconvertible currency will not be experienced in the United States in the next few years. This feature of our monetary system would seem to be thoroughly bad if retained permanently. As a temporary measure to be used to conserve our gold supply during a period of panic, it may be justified.

12. DEVALUATION AND PRICES

We may next turn our attention to some theoretical considerations relating to the devaluation of the dollar as a means of raising prices in the United States. We may dismiss at once the naïve commodity theory of the value of gold — that prices can all be automatically increased directly in proportion to the increase in the mint price of gold, or the reduction in the weight of the gold dollar. We have already discussed the fallacy of this point of view. If devaluation of the dollar is to cause a rise in prices, it must do so through its effect upon the international exchange value of the dollar and upon the quantity of money and bank credit.

When we were on the gold standard with a dollar of 23.22 grains of fine gold, the mint par of exchange between the United States and France was 3.92 cents for one franc. With the dollar devaluated to 13.71 grains of fine gold, the mint par of the franc is 6.63 cents. So long as the Government, through its foreign exchange stabilization fund, maintains the dollar at approximately its parity with the gold franc of the present weight, the franc will remain worth approximately 6.63 cents. The Government has shown by its policy since February 1, 1934, that it does intend to maintain this parity, and has been successful in maintaining it approximately. While the average price of the franc was 6.21 cents in January, its average price in February rose to 6.46, in March to 6.58 and in April to 6.62. There has been a similar rise in the rates of exchange with other gold currencies — the florin, the Swiss franc, and the lira, for example.

Consider now the effect of such a fall in the foreign exchange value of

the dollar upon the prices of exportable commodities — the price of cotton, let us say, exported to France. Suppose that the French have been willing to buy our cotton at two francs a pound. At the old par of exchange this would be 7.84 cents a pound. But at the new par of exchange it would be 13.3 cents per pound. If the French continued to pay as much for our cotton as before in terms of francs, the price of cotton would rise from 7.84 cents to 13.3 cents per pound. Similar results would appear in the case of other commodities exported to other gold standard countries; also in commodities exported to paper standard countries, unless their currencies had meanwhile also been devaluated in terms of gold.

There is, of course, the possibility that, instead of the French continuing to pay two francs a pound for our cotton, they would continue instead to pay only 7.84 cents. In that case their cotton would cost them in terms of francs only 1.18 francs a pound instead of 2 francs. This would tend to encourage them to buy more cotton. If there were similar results in other foreign purchases of our cotton, the increased demand would naturally result in higher prices in the United States. The final result would be that our growers would sell more cotton than before at higher prices than before, while foreigners would still enjoy the advantages of a cheaper commodity in terms of their own currencies. In any event, the devaluation of our dollar would result in higher prices for cotton and all other exportable commodities whose prices are controlled largely by world-wide demand and supply, and not merely by the demand and supply in our domestic markets.

In a similar way the prices of imported commodities would rise. If the British rubber producers, for example, were able to obtain in the world market one pound sterling for 100 pounds of rubber, the rubber would cost our importers 3.5 cents a pound with sterling at \$3.50. With sterling at \$5.15, the closing rate on sight bills in New York, April 5, 1934, the rubber would cost the American importer \$5.15, provided the British price had still remained at one pound sterling for 100 pounds. If our importers refused to buy their usual quantity at that price, the resulting decline in demand might force the British price below the previous level, but the American price would still remain above the old level.

The most probable results of the devaluation of our dollar, it might have been predicted on the basis of deductive reasoning at the time of devaluation, would be at least a temporary expansion of exports and a temporary decline in imports — in volume, but not necessarily in value — and a rise in the prices of both imported goods and exportable products. There would be no corresponding and immediate rise in the prices of other commodities, securities, or real estate resulting directly from the devaluation

of the dollar. Nevertheless, a strong tendency for other prices to rise would develop. The higher prices prevailing in the exporting industries, coupled perhaps with a large volume of sales, would make these industries more prosperous, increase the buying power of persons engaged in them, and thus increase the demand for other commodities. This increased demand might then spread gradually from industry to industry and affect eventually the whole industrial system. Similarly, the rising prices of the imported goods would increase the cost of production of the importing industries, which would endeavor, and probably not without success, to pass the increase in costs on to the buyers of their products.

Moreover, the increase in the quantity of gold reserves—in terms of dollars—would make possible a greater potential expansion of paper money and bank deposits, with the same reserve ratio requirements as before. This potential expansion alone would not force a rise in prices, but it would permit it, and it would lead to the expectation that such a rise would eventually occur, and thus encourage speculation for a rise in prices of commodities, stocks, and real estate, which would tend to bring such a rise actually under way.

There have been, however, and still are factors tending strongly to prevent the rise in prices—made possible by the potential supply of credit—from taking place. What these factors are has already been indicated in earlier pages. Speculators if not too rigidly regulated may bid up the price of commodities, securities, and real estate, buying on margin, and operating largely with borrowed funds. Here the anticipated credit expansion brings the desire to buy, while the actual expansion gives the power. No factors other than monetary factors plus confidence in a rise or a willingness to take a gambler's chance are required.

It is otherwise with consumers' goods, which must be sold for the most part to the great mass of wage-earners. Until these wage-earners find employment at good wages, they cannot buy a large volume of goods, and until they can buy a large volume of goods, the factories cannot operate on a large scale nor buy the products of other industries—raw materials, equipment, supplies—and employ much labor. Potential expansion of bank credit alone is not enough to break this vicious circle of inactivity. Some special stimulus to demand for consumers' goods is required—some increase in the purchasing power of large masses of people.

13. PRIMING THE PUMP

Such a stimulus the administration of the New Deal has attempted to provide in the form of large appropriations for public works, bonuses paid to farmers for restricting output of farm products, relief of unem-

ployment by the Civil Works Administration, and other forms of unemployment relief. In the aggregate literally billions of dollars of additional purchasing power has been thus created, most of which has been directed to the purchase of consumers' goods, either directly by those who first received it or by others. Additional buying power has been created by government loans to railroads for buying steel rails and equipment — thus providing aid to the so-called heavy industries, which have also received some benefit from the program of the Public Works Administration.

The payments made to the farmers for restriction of output have been designed to serve a double purpose. They have not only increased the purchasing power of the farmers and thus increased the demand for the products of industry, but they have increased the probabilities of a rise in the price of the chief farm products by restricting their supply.

The purchasing power thus provided in the first instance by government funds has been designed to "prime the pump," a figure of speech frequently used in this connection. It has been hoped that the business activity and employment stimulated by these funds will generate so much additional employment and create so much additional buying power that the Government may soon withdraw its artificial aid. The government aid may be likened to the self-starter on an automobile, which will provide power enough to run the engine for a while, but cannot do so for long without exhausting the battery. If the engine is to pick up speed and function properly, it must do so under its own power. If the industrial machine does not in a reasonable time pick up speed and generate its own purchasing power, the power of the Treasury to maintain it in operation will become exhausted. In more prosaic language, the Government's expenses will exceed its revenue, its budget will remain unbalanced, its credit will be destroyed, its power to borrow will fail, and it will be forced to meet expenses by the method of the printing press and limitless inflation. However, at the time of writing, there seems no great danger of such calamitous developments. Actual recovery from the depression with rising prices and increasing business activity and employment seems positively to be under way, as indicated by the statistics in Table XXXVI, on page 759.

These statistics of recovery require a little comment. The first thing to note is that there was a marked recovery in industrial production, construction contracts awarded, factory employment and payrolls, car loadings and commodity prices from January, 1933, to March, 1934. A second point of importance is that prices of farm products, particularly of grains — and the same would apply to cotton — had risen much more sharply

TABLE XXXVI. STATISTICS OF RECOVERY

Federal Reserve Board index numbers adjusted for seasonal variation
1923-1925 = 100

Year and Month	Industrial Production	Construction contracts awarded	Factory employment*	Factory payrolls*	Freight car loadings	Commodity prices
1933		22	59	39	56	61
January....	65	14	57	37	50	60
March.....	59	21	70	50	65	69
July.....	100	48	72	54	60	71
November...	72					
1934		49	72	53	64	72
January....	78	44	75	59	64	74
February...	82	33	77	63	66	74
March.....	85					

B. Bureau of Labor Statistics index numbers of wholesale prices
1926 = 100

Year and month	All commodities	Farm Products	Grains	Live stock and poultry	Other farm products
1933		42.6	32.9	37.8	48.7
January..	61.0	56.6	61.3	41.2	64.3
November	71.1				
1934		58.7	63.7	41.1	67.4
January..	72.2	61.3	63.2	48.2	68.3
February.	73.6	61.3	62.3	49.5	67.7
March...	73.6				

* Factory employment and payroll indexes are three-month moving averages centered at second month. This tends to make them lag behind the movement of a monthly index. Factory payrolls index is unadjusted for seasonal variation.

than the average prices of all commodities. The Administration had in fact achieved in part two of the major objects of its recovery program — an increase in commodity prices and an increase in prices of farm products, greater than the average increase for all commodities. This relatively great increase in the price of farm products was the result of three factors: First, and probably most important, the devaluation of the dollar, with the decline in the international exchange value of the dollar, and the consequent increase in the dollar price of exportable commodities. Secondly, the policy of encouraging, by government action the restriction of production, of agricultural products. Thirdly, the natural tendency of prices to make the greatest recovery in the case of those commodities which have suffered the greatest decline.

The March, 1934, indexes of our table do not make such favorable comparisons with the July, 1933, indexes as with the March, 1933, indexes. On the other hand, the March, 1934, indexes make favorable comparisons.

OUR NEW MONETARY SYSTEM

with November, 1933, indexes. The explanation is this: From March, 1933, to July, 1933, an unhealthy speculative movement developed in commodities. There was apparently a widespread belief that a period of great inflation was at hand. Manufacturers speeded up production in anticipation of rising costs. But this movement turned out to be a mere flash in the pan. The price of wheat and other commodities got out of line with international prices and collapsed, this collapse being occasioned in part by the failure of the foreign exchange value of the dollar to decline as rapidly as had been expected. The increased output of the factories did not find a market because payrolls had not increased rapidly enough to absorb the larger quantity of goods at the higher prices demanded. Following this abortive revival, business activity declined until November, when the decline was checked and a second recovery got under way, apparently on a sounder basis. This recovery has proceeded in a most encouraging way through the first half of 1934, and promises to increase in momentum. At the present writing the pump seems to have been primed and to show signs of functioning in a fairly satisfactory manner. Nevertheless, industrial activity, factory employment and payrolls, and purchasing power of farmers and consumers in general are still abnormally low. Recovery has begun, but is not yet far on its way.

14. DEVALUATION AND INTERNATIONAL RELATIONS

It has already been pointed out that devaluation of our dollar tends to increase the exports of the United States by reducing the cost of our commodities to foreign buyers in terms of their own currencies. This, of course, the effect only so long as our domestic prices have not risen in proportion to the decline in the foreign exchange value of our dollar. Our avowed purpose is not thus to expand exports, but rather to raise our domestic prices. Foreign nations are, however, less interested in the purposes than in the results of our monetary policy. If they are injured by the results, they will feel resentment however pure our purposes may be. Let us consider how they may be injured. If our manufacturers are able to reduce their prices in terms of foreign currencies, because their costs have not risen in proportion to the decline in the value of the dollar, they can undersell their foreign competitors in the export trade and thus deprive them in part of their market or force them to accept ruinously low prices. Similar considerations apply also to raw materials and farm products, wherever these come into competition with foreign products in the export markets. Exporters in other countries will clamor for relief through governmental action, and this may result in a policy of

devaluation being adopted in other countries. Here lies the possibility of a devaluation war among the nations. Producers for the domestic markets in foreign countries may also clamor for protective tariffs or import quotas to save them from the ruinous effects of our devaluation method of dumping our products on their markets, so that the policy of devaluation may lead to further restrictions on international trade.

Another consequence of international importance of our devaluation plan has been the enormous imports of gold. These gold imports resulted from the fact that the Treasury price of gold of \$35 an ounce was substantially above the cost in dollars of gold in European markets at the existing rate of foreign exchange. With the franc, for example, several per cent below the new par of 6.63 cents, dealers in foreign exchange could make a substantial profit by buying gold in Paris with francs bought below par, and selling it to the United States Treasury at \$35 an ounce. During February and March the net imports of gold in such operations exceeded \$600,000,000.

The incoming gold was purchased at the United States Assay Office in New York, and payment was made to the importing banks in checks drawn on the Treasury's deposit account in the Federal Reserve Bank of New York. In order to maintain its deposit account undiminished, the Treasury deposited with the reserve bank gold certificates representing an equivalent amount of gold in the Treasury. As many certificates, of course, could be issued in this way as the amount of new gold acquired. The net result was that both the reserve bank deposits of the member banks which imported the gold and the gold certificate reserves of the Federal Reserve Bank of New York were substantially increased by the gold imports, thus proportionately increasing the possibilities of credit expansion in the United States. The other side of the picture, however, was the fact that gold reserves of other countries and their powers of credit expansion were reduced by the same amount, causing uneasiness and resentment abroad.

15. THE ETHICS OF DEVALUATION

Devaluation is considered by many persons to be dishonest. They regard it as nothing less than legalized theft. The Government, for example, has borrowed from an investor \$1000 in gold, or 23,220 grains of fine gold. It arbitrarily reduces the size of the dollar to 13.71 grains, and views its obligations as having been met when it has paid back to the investor 13,710 grains of fine gold, or 1000 of these small dollars. It has arbitrarily withheld more than 40 per cent of the amount it had promised to pay back. Not only that, but it has given every other debtor legal authority to engage in the same practice.

The advocates of devaluation deny that it is unethical. They deny that the creditors are being robbed; what has actually been borrowed and what is to be paid back is not essentially gold, but purchasing power. Neither the borrower nor the lender has been primarily interested in the gold represented by the loan. If, then, the lender receives back in purchasing power as much as he lent, he receives all to which he is entitled. If he receives a great deal more, he gets more than he ought to get. He is, in fact, from an ethical point of view, if not legally, robbing the borrower. Whether or not devaluation is theft depends therefore upon definitions. General agreement upon this point is impossible.

A second defense of devaluation is that whatever is socially expedient is right. If the social system can be saved from violent revolution and possible complete disintegration only by devaluation, then devaluation is justified. It serves the greatest good of the greatest number. It may be recognized as an evil, but it is wise to choose the lesser of two evils; and even the creditors will be better off after having received small dollars peacefully than they will be if they have to fight for recovery of their large dollars, with the prospect of fighting in vain and being killed in the process. The writer is inclined to admit that there is some force in both of these arguments.

Devaluation is undoubtedly an evil, not only because it works some present injustice, but because it may serve as a bad precedent for future operations of the same sort, and because it tends to undermine the confidence of the people in the financial integrity of the Government. But under the circumstances that existed in 1933, devaluation seems to have been the best way out of a serious difficulty. It probably prevented the necessity of further ruinous deflation of commodity prices, securities, and wages. It is not improbable that further deflation would have resulted in riots, rebellion, and revolution. As a device to raise prices devaluation will rob the creditors of no more domestic purchasing power than an equal inflation by other means, such as bank deposit currency. And if we are to have higher prices, it affords a broader and more stable gold base for credit expansion than we could have had without devaluation.

The United States does not stand alone in its policy of devaluation. France devalued the franc in 1928 to approximately 20 per cent of its pre-war value, as against our more modest devaluation of the dollar to 59.06 per cent. Italy, Belgium, and numerous other countries have likewise devalued their currencies since the War. And if we look for earlier historical precedents, we find that England, for example, has devalued its gold unit repeatedly since the year 1257, when the price of gold per fine ounce

was 17.8 shillings. On April 3, 1934, the price of gold bullion on the open London market, in terms of British currency, was 135 shillings per fine ounce, and before the British suspension of gold payments on September 21, 1931, the price was 84s. 9½d.

16. THE POSSIBILITIES OF INFLATION

The gravest objection to our new monetary policy as developed up to July, 1934, lies in the possibilities of inflation. The purpose of the new policy is, of course, "reflation" to the average level of prices of 1926; that is, an increase of about 67 per cent above the level prevailing in the early part of 1933, or an increase of about 40 per cent above the level of October, 1933, when the Warren gold purchase plan was first put into effect. But the various changes in our monetary and banking laws will permit a rise in prices far beyond this proposed level, particularly if a world-wide rise in prices develops after the present period of prostration, as seems possible. Let us consider the possibilities from the point of view of the potential credit expansion of our banking system, on the assumption that similar expansion takes place in other countries, so that our price level will not be depressed by external influences. This is not an extravagant assumption.

In an earlier chapter it was estimated that every dollar of gold reserves of the federal reserve banks would easily support more than ten dollars of member bank credit in the form of deposits subject to check, after making a liberal allowance for the drainage of cash into circulation that accompanies expansion of bank deposit currency. On April 4, 1934, the total gold certificate reserves of the twelve federal reserve banks amounted to \$4,343,000,000, reserves which would have supported an expansion of member bank deposits to at least \$43,430,000,000, nearly twice the amount of these deposits on March 5, 1934, at which time they amounted to \$25,293,000,000. But at the end of March, 1934, the total gold stocks of the country were approximately \$7,700,000,000, so that it would be a simple financial operation for the Treasury to increase the gold certificate reserves of the reserve banks to at least \$5,000,000,000, even if the \$2,000,000,000 foreign exchange stabilization fund is maintained intact in gold specially earmarked for stabilization purposes. To this \$5,000,000,000 gold certificate reserve could be added several hundred millions — possibly \$500,000,000 — of other lawful money, available as legal reserve against federal reserve bank deposits. This grand total of \$5,500,000,000 would support member bank deposit currency to the amount of \$55,000,000,000, on the conservatively estimated ratio of 1 to 10. This figure may be compared with the total deposits

of all banks in the United States, exclusive of interbank deposits, of \$53,852,000,000, at the end of June, 1929, and of member bank deposits alone of only \$32,284,000,000.

But there are still further possibilities of credit expansion under the new system. Part of the \$2,000,000,000 in the stabilization fund could be added to the gold certificate reserves of the reserve banks. Moreover there is the possibility, under authority of the Inflation Bill of 1933, of expanding the greenback currency to the amount of \$3,000,000,000, all of which might become lawful money reserve against federal reserve bank deposits.

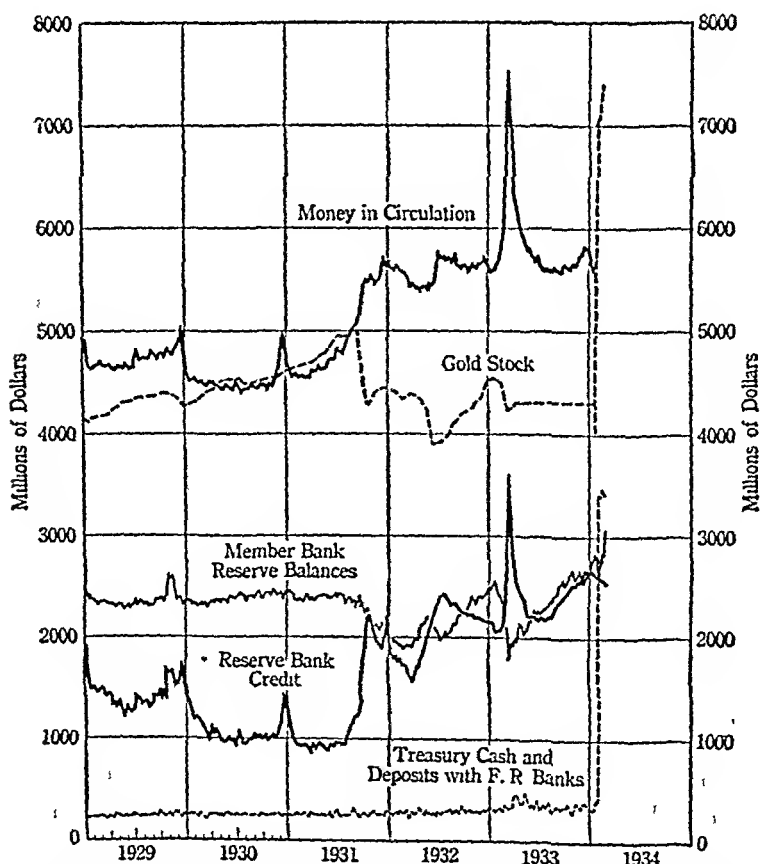


CHART XVIII. RESERVE BANK CREDIT AND RELATED ITEMS

Note the increase in gold stock and Treasury cash resulting from devaluation of the dollar
From the *Federal Reserve Bulletin*, March, 1934.

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TABLE XXXVII. COMPARATIVE FEDERAL RESERVE BANK STATEMENTS

	ASSETS		
	Apr. 4, 1934	Mar. 28, 1934	Apr. 5, 1933
Gold certificates on hand and due from United States Treasury.....	\$4,309,575,000	\$4,281,197,000	\$913,536,000
Gold.....	33,749,000	32,911,000	2,288,822,000
Redemption fund — federal reserve notes.....	215,178,000	220,886,000	76,479,000
Other cash.....	\$4,558,502,000	\$4,534,994,000	319,655,000
Total reserves.....	8,513,000	9,038,000	3,598,492,000
Redemption fund — federal reserve bank notes.			1,100,000
Bills discounted:			
Secured by United States Government obligations.....	12,244,000	13,592,000	140,543,000
Other bills discounted.....	35,285,000	38,987,000	300,522,000
Total bills discounted.....	\$47,529,000	\$52,579,000	\$441,065,000
Bills bought in open market.....	26,045,000	29,359,000	285,073,000
United States Government securities:			
Bonds.....	442,795,000	442,928,000	421,774,000
Treasury notes.....	1,222,631,000	1,214,246,000	457,871,000
Certificates and bills.....	766,286,000	774,712,000	957,723,000
Total United States Government securities.....	\$2,431,762,000	\$2,431,888,000	\$1,837,368,000
Other securities.....	563,000	563,000	5,541,000
Total bills and securities.....	\$2,505,899,000	\$2,514,387,000	\$2,589,947,000
Due from foreign banks.....	3,131,000	3,131,000	3,620,000
Federal reserve notes of other banks.....	16,551,000	15,876,000	24,211,000
Uncollected items.....	427,938,000	395,844,000	321,430,000
Bank premises.....	52,503,000	52,432,000	54,123,000
Federal Deposit Insurance Corporation stock.....	69,650,000	69,650,000	52,599,000
All other assets.....	51,349,000	49,910,000	
Total assets.....	\$7,694,036,000	\$7,645,262,000	\$8,625,522,000
	LIABILITIES		
	Apr. 4, 1934	Mar. 28, 1934	Apr. 5, 1933
Federal reserve notes in actual circulation.....	\$3,032,016,000	\$2,997,036,000	\$3,644,137,000
Federal reserve bank note circulation — not.....	106,552,000	122,743,000	15,930,000
Deposits:			
Member bank — reserve account.....	3,440,803,000	3,438,048,000	1,975,731,000
Government.....	66,883,000	56,443,000	85,596,000
Foreign bank.....	5,049,000	6,138,000	10,935,000
Special deposits: Member bank.....	20,998,000	22,347,000	69,342,000
Non-member bank.....	9,058,000	10,952,000	17,466,000
Other deposits.....	104,109,000	121,024,000	38,985,000
Total deposits.....	\$3,656,798,000	\$3,656,752,000	\$2,196,055,000
Deferred availability items.....	427,984,000	304,468,000	315,745,000
Capital paid in.....	146,273,000	145,586,000	149,617,000
Surplus.....	138,383,000	138,384,000	278,599,000
Subscription for Federal Deposit Insurance Corporation stock:			
Paid.....	69,650,000	69,650,000	
Called for payment on April 15.....	69,650,000	69,650,000	25,439,000
All other liabilities.....	46,730,000	50,993,000	
Total liabilities.....	\$7,694,036,000	\$7,645,262,000	\$8,625,522,000
Ratio of total reserves to deposit and federal reserve note liabilities combined.....	63.2%	63.2%	61.6%
Contingent liability on bills purchased for foreign correspondents.....	\$4,771,000	\$4,935,000	\$50,330,000

Note the changes in the items gold, gold certificates, total reserves, federal reserve notes, and member bank reserve account.

The tremendous possibilities for bank-credit expansion indicated in the foregoing discussion would be considerably reduced if Congress would change the reserve requirements of the member banks in the way recommended repeatedly by the Federal Reserve Board. The proposal of the Federal Reserve Board is that the amount of reserves required of member banks should depend not only upon the value of their deposits, as is the case under the existing law, but also on the rate of turnover of deposits. If this proposed plan were adopted, reserve requirements would increase rapidly and automatically when speculative activity developed, and the increase would fall upon the banks at which a rapid turnover of deposits indicated a growth of speculative activity, while for other banks reserve requirements might not increase. In general the object of this plan would be to discourage excessive speculation without retarding ordinary commercial and business activity.

In addition to other possibilities of inflation of our currency there are decided possibilities of inflation by way of silver coinage provided for by recent legislation. On December 21, 1933, the President issued a proclamation opening our mints to the coinage of standard silver dollars from all silver hereafter produced in the United States at the rate of \$1.29 per fine ounce. The Government was to retain 50 per cent of such silver, however, as seigniorage, and this 50 per cent was to be held in the Treasury. The dollars coined from the other half were to be returned to the depositors of the silver presented. This was tantamount to buying the silver on government account at 64.5 cents an ounce, or about 50 per cent above the market price at the time. Since the production of silver in 1932 had been about 24,000,000 ounces and could be expected to increase substantially under the stimulus of the higher price, it could be expected that this proclamation would result in the coinage of 15,000,000 silver dollars annually, possibly more. This proclamation was under authority of the Inflation Bill, and represented also a step toward carrying out an international agreement made at the London Conference of sixty-six Governments in 1933, under which these participating Governments agreed to take measures which would increase the monetary demand and reduce the market supply of silver.

Under the Gold Reserve Act further provisions were made for increasing the amount of silver currency. The President was authorized to issue silver certificates against any silver bullion or standard silver dollars in the Treasury not then held for redemption of any outstanding silver certificates, and to coin standard silver dollars or subsidiary currency for the redemption of such silver certificates. The President was authorized also, as already noted, to reduce the weight of the silver coins in

proportion to the reduction in the weight of the gold dollar. If the President takes such action, it will result in a substantial increase in the amount of silver coins and certificates in circulation.

Even greater potential expansion of our silver currency was provided for by the Silver Purchase Act of June, 1934. This act authorizes and directs the Secretary of the Treasury to buy silver at home and abroad at such rates, times, and terms as he deems reasonable and most advantageous to the public interest. The price to be paid in the United States is not to be more than 50 cents a fine ounce, and elsewhere not in excess of the monetary value, that is, at the present weight of the silver dollar, not more than \$1.29 a fine ounce. The act declares it to be the policy of the United States to increase the proportion of silver to gold in the monetary stocks of the United States until silver constitutes one fourth of the total monetary value of the stocks of gold and silver combined.

The Secretary of the Treasury is authorized to sell silver acquired under the terms of this act whenever the market price exceeds the monetary value of the silver, or whenever the government stocks of silver represent more than 25 per cent of the total monetary stocks of gold and silver.

Silver certificates are to be issued, based on the silver purchased, to an amount not less than the cost of all the silver purchased under the act. All the silver certificates are made legal tender and redeemable on demand in standard silver dollars.

The act gives the Government control over the ownership, importation, exportation, and transportation of silver similar to the control over gold given to it by the Gold Reserve Act.

Not only is this Silver Purchase Act likely to result in an expansion of several hundreds of millions of dollars in our silver currency, but it may lead to international action for the restoration of the free coinage of silver and the establishment of an international bimetallic system of coinage. The ratio of 25 per cent of silver to 75 per cent of gold in our total monetary stocks suggests also that a symmetrical coinage system may be contemplated. Under the symmetrical standard, which has been advocated by various writers, a country's paper currency is made redeemable in gold and silver in some specified proportion, for example, 25 per cent in silver and 75 per cent in gold. If standard symmetrical coins were minted for use in circulation they would contain gold and silver alloyed in definite proportion. For example, instead of coining gold dollars of 13.71 grains of fine gold, and silver dollars of 371.25 grains of fine silver, we might mint symmetrical coins containing three fourths of 13.71 grains of gold and one fourth of 371.25 grains of silver. It has been

argued that symmetallism has the advantages of bimetallism without its disadvantages. The value of the symmetrical coin depends upon the value of both gold and silver, and, combined in the same coin, neither metal can drive the other out of circulation under the operation of Gresham's Law.

It is obvious that the devaluation of the dollar and the consequent enormous increase in the gold reserves in terms of dollars, the increase in silver coinage already provided for, and the further possible increase in silver coinage as well as the possible expansion of the issue of greenbacks, bring the country face to face with the menace of inflation on a worse scale than the inflation of the two periods of inflation discussed in other chapters of this book.

But in the opinion of the writer the most dangerous factor in the present monetary system is the factor of inconvertibility of the paper currency into gold. It is a misnomer to call our present system a gold standard. Paper money which is inconvertible is inconvertible paper money, *regardless of what other term may be applied to this form of currency.* It is doubtless true that to make our paper money at once convertible into gold may involve some risk of a raid on the gold stocks of the Treasury. But not to make it convertible after a reasonable time involves the greater risk of a flight from this currency and utter financial demoralization. As for those who blame all the world's monetary ills on the "fetish" of the gold standard, if they will but read the history of the last twenty years they will find that most of the monetary ills and many other ills that now plague the world had their origin in the almost world-wide departure from the gold standard in 1914 and thereafter. Had it not been for the disastrous inflation engendered by that departure from the old-fashioned gold standard, there would have been no disastrous period of deflation, and no necessity for trying now to extricate ourselves therefrom by novel and

CHAPTER XXX

RECENT DEVELOPMENTS

1. THE RETIREMENT OF THE NATIONAL BANK NOTES

It was pointed out in previous pages¹ that the framers of the Federal Reserve Act of 1913 intended the supposedly more elastic federal reserve notes to displace eventually the national bank note currency. As so often happens, however, later developments did not justify the expectations of the lawmakers. After 1914, the national banks showed little inclination to retire their notes. By the end of June, 1932, the volume of these notes in circulation stood at \$701,000,000, a decline of only \$14,000,000 from the amount outstanding July 1, 1914. On July 22, 1932, the President approved the Federal Home Loan Bank Act. This act gave, for three years, the circulation privilege to all United States Government bonds bearing interest at a rate not exceeding $3\frac{3}{8}$ per cent.² As a consequence of the use made of the provisions of this act, the volume of the national bank note circulation had increased to \$938,000,000 by the end of February, 1934.

After this date the volume of national bank note currency tended to decrease. As a result of various developments member banks of the federal reserve system were coming into possession of tremendous amounts of surplus reserves. By drawing against these reserves currency could be obtained for counter money requirements. Under these conditions, national banks had less incentive to incur the expenses which would be required to keep their notes outstanding. By the end of February, 1935, the national bank note circulation had fallen \$115,000,000 below the amount outstanding a year earlier.

Shortly after this date the Treasury undertook a series of measures providing for the practical retirement of this currency. On March 2, 1935, the Comptroller of the Currency announced³ that, since the circulation privileges on United States bonds conferred by the act of 1932 would expire on July 22, 1935, national banks would be required before this date to substitute either the remaining classes of bonds bearing the

¹ Pages 507-08.

² This act gave the circulation privilege to more than \$3,000,000,000 of bonds. But this law did not repeal the requirement that the amount of notes issued must not exceed the paid-in capital of a bank. At the time of the passage of the Federal Home Loan Bank Act, the maximum volume of national bank note issues was thus limited to about \$920,000,000.

³ See *Federal Reserve Bulletin*, March, 1935, p. 145.

circulation privilege — i.e., the 2 per cent consols of 1930, the 2 per cent Panamas of 1916-36 and 1918-38 — or lawful money. On March 9, 1935, the Treasury announced that the consols and Panamas had been called for redemption on July 1, 1935, and August 1, 1935, respectively. Two reasons were given for this action by Jefferson Coolidge, Under-Secretary of the Treasury. The first was to reduce the national debt; and the second was to secure a "more uniform and better currency system." Since it would have been just as important years before to have obtained the advantages of a more simplified currency system — whatever they were — the real reason for the Treasury's action must presumably have had its inspiration in fiscal considerations.

What unique fiscal advantages could be gained at this juncture by retiring the circulation privilege bonds? Ordinarily the retirement of one issue makes it necessary for the Treasury to float another issue; and, at this time, deficits in the public budget were requiring the constant issuance of new Treasury offerings. But the profits of the gold revaluation of January 31, 1934, over and above the requirements of the stabilization fund, had not been spent; and it probably appeared to our fiscal administration that, if some use were not found for at least a portion of these profits, it might become difficult to withstand pressure from the advocates of a soldiers' bonus, the crude inflationists, and other types of spenders.

The procedure adopted to retire the national bank notes was as follows: Each national bank was required to deposit, before the date of expiration of the circulation privilege of its called bonds, enough lawful money with the United States Treasury to retire its outstanding notes. In calculating the amount of this deposit the bank was given credit for the five per cent redemption fund already held by the Treasury. To obtain the funds thus required to guarantee the cancellation of their note issues national banks drew against their balances at the reserve banks. These balances were replenished,¹ however, on the dates at which the called bonds were redeemed. To provide the funds to redeem the bonds the Treasury drew against its balance at the reserve banks which had been set up when the Treasury deposited gold certificates or was given credit payable in these certificates. The source of the funds the Treasury thus deposited at the reserve banks was the bookkeeping profit resulting from the reduction of the weight of the gold dollar in January, 1934.

¹ On the completion of these operations reserve balances were slightly enlarged over what they otherwise would have been. The par value of the bonds plus the 5 per cent retirement fund exceeded the outstanding volume of national bank notes.

As a result of this note-issue retirement, the currency of the country was further simplified. At the present time only three kinds of paper currency remain in active circulation; the Federal Reserve notes, silver certificates and United States notes. The Treasury notes of 1890, the Federal Reserve Bank notes, the National Bank notes and gold certificates are being retired as rapidly as they return from circulation.

2. THE DEMAND FOR FURTHER REMODELING OF THE FEDERAL RESERVE SYSTEM

An administration which had become as thoroughly committed as Mr. Roosevelt's to the principle of rebuilding our financial organization¹ could not be expected to leave the country's central banking system untouched. Our federal reserve banks had not succeeded in the decade of the twenties in avoiding an extreme inflation in the capital markets. Subsequently the reserve system was charged with having failed to arrest a violent deflation both of commodity and security prices. During its existence, furthermore, our whole banking system had eventually broken down. While opinions differed violently as to the responsibility of the federal reserve banks for these untoward developments, the course of events after the summer of 1933 was such as to strengthen the hands of those demanding central banking reform. It shortly became evident that manipulations of the price of gold could not accomplish all that had been promised. Furthermore, the doctrine had been gaining ground that bank deposit credit comprises the country's principal media of payment; that, in leaving so much control over this media to private bankers, Congress had been abdicating its constitutional authority to regulate the country's currency. Extreme inflationists felt they had little to lose, and possibly everything to gain by such legislation; and the moderates could be appealed to by the argument that the administrative structure of the federal reserve system was too complicated and required simplification.

Despite the growing strength of these demands for reform, it is not difficult to explain why legislation expressive of this point of view was postponed until the third year of the Roosevelt Administration. In 1933, the first problem was to devise a sound means of reopening the banks that had been closed. Then, again, as before indicated, discussions of devaluation and of a commodity dollar lessened for a while the emphasis upon the problem of bank credit control. Furthermore, the omnibus Glass bill seemed, in 1933, to have the right of way since preferred status on the calendar had been demanded for it by influential leaders of previous Congresses. The principal provisions of the Glass

¹ Cf. Mr. Roosevelt's Inaugural Address of March 4, 1933.

Board were to receive enhanced compensation; on retirement they would benefit from liberal pension provisions; and in two very important respects their authority would reach into the government of the district banks. The bill provided, first, that the Governors of the district banks must be approved annually by the Federal Reserve Board; and, secondly, that no member of a district board of directors could serve for a longer period than two terms of three years each.

With respect to the powers of the Board it was provided that old statutory definitions of eligible paper would be abolished and that, under rules to be prescribed by the Board,

any Federal Reserve Bank may discount any commercial, agricultural or industrial paper and may make advances to any such member bank on its promissory notes secured by any sound assets of such member bank.

The Federal Reserve Board would be given the further power to change reserve requirements against member bank deposits: and such changes might be made effective against banks in one or more reserve districts and also against either of the three classes of country, reserve city, and central reserve city banks. The Board would issue the rules regulating the emission of federal reserve note currency. Notes thus issued would not require as security any specific type of paper but would simply be a "first and paramount lien on all assets" of the issuing federal reserve bank. Since another section of Title II greatly liberalized the powers of national banks to acquire long-term real estate mortgages, note currency might therefore be based on real estate.

Under this bill the open market committee would be set up in such a way that three of the five members would also be members of the Board.¹ It was provided that the individual reserve banks must comply with the policies of this committee in their open market operations. The open market committee would be given the further power to make recommendations to the Board regarding the discount rate schedules of the reserve banks.

The introduction of this bill occasioned the most heated controversy in Congress and in the press. Its opponents argued that the bestowal of so much discretionary power in a board, the members of which were politically appointed, was unsafe and might finally result in making the reserve banks mere instruments of the Treasury in floating government issues. They insisted that the provisions permitting the Reserve Board to admit for discount any sound assets and to base federal reserve notes upon such assets would destroy any real difference between federal re-

¹ The remaining two members would be Governors of the district banks.

serve notes and fiat money. Those hostile to the bill further asserted that it would be unwise to make the tenure of office of the district governors so completely dependent on the Federal Reserve Board. Many economists, moreover, professed alarm at certain pronouncements of Governor Eccles which seemed to imply that, provided machinery could be established to manufacture the right, total amount of credit, it would make little difference what type of loans or investments banks might acquire in extending credit. Such economists were not so certain that it would be desirable to weaken the authority of the district reserve banks even though the purpose might be to increase the administrative cohesion of the system and to make it easier for the system's administration to formulate "national" policies. It was often suggested that the original theory of the reserve system, that much dependence should be placed on the first-hand information of district officials regarding the quality of loans and investments member banks might be making, had not yet been proved unsound. It was argued that the subordination of the independence of district officials would lead to the destruction of qualitative tests and to the unwarranted application of mechanical, quantitative type of formulae in the determination of the system's policies.

4. TITLE II OF THE BANKING ACT OF 1935

It would be interesting to follow this debate through its various stages and set forth in detailed sequence the changes that were agreed upon. Space, however, does not permit such treatment. It can merely be reported here that, largely as a consequence of the persistency and political skill of Senator Glass, the bill secured a thorough discussion, first, in the sub-committee of the Senate Banking and Currency Committee and, thence, after the passage of the Senate bill, before the conferees of the two Houses. The bill finally signed by the President on August 23, 1935, as the Banking Act of 1935, was indeed much changed from that originally introduced in the House. Under the revised bill the President was authorized to appoint a completely new Board (henceforth to be known as the Board of Governors) to serve after February 1, 1936. A number of short-term appointments must be made in the beginning, so that one seat will be vacated at the end of each two years. Eventually, however, the period of service will be fourteen years for all members. Although the President of the United States may remove a member "for cause," an attempt was made to insure greater independence for the Board by the provision that no member shall be eligible for reappointment "after he shall have served a full term of fourteen years."

Many students of this legislation have expressed regret that the pen-

sion provisions of the House bill did not prevail. General satisfaction is felt, however, with respect to the provisions which make it impossible for a single President to make enough appointments on account of normal retirements to comprise a majority of the Board before the end of a second term of office.

The Federal Open Market Committee under the statute will consist of the seven members of the Board of Governors and five representatives of the district banks. Although it was provided that no reserve bank can engage in open market operations except in accordance with the direction and regulations of this Committee, the danger of too much deference to fiscal considerations was somewhat lessened by the provision that purchases and sales of United States Government obligations must be made only in the open market (i.e., these issues may not be floated directly with the reserve banks). With regard to control of the district banks, the House provision that directors might not serve for a longer period than six years was eliminated;¹ and it was enacted that the Governor of each district bank (after March 1, 1936, to be known as the President) can, after an initial confirmation by the Board of Governors, serve out his term of five years (or unexpired portion thereof).

The Board of Governors was given power, as stipulated also in the House bill, to change member banks' ² reserve requirements against time and demand deposits without securing the President's approval and without declaring an emergency to exist.³ But, under the bill as enacted, reserve percentages cannot be reduced from those prevailing before the act; and increases can do no more than double the original requirements. Power to alter reserves within this range seems therefore to have been given for the purpose of resisting expansion and not for the purpose of generating inflation.⁴

¹ The Board of Governors, of course, will have power to determine the number of terms of service of directors appointed by it, i.e., Class C directors. In a letter of December 31, 1935, addressed to federal reserve banks and their branches, agreement was expressed with the following communication of the Federal Reserve Board of January 9, 1935: "The Board has reached the conclusion that six years of service represents the maximum period during which a director should remain continuously in office. It will be guided by this view in future and will not continue in office as directors men appointed by it who have served six or more consecutive years (except in the cases of chairmen of the Federal Reserve banks.)"

In the above the Board is undoubtedly expressing the opinion, however, that terms of service of Class A and Class B directors should be similarly limited.

² Reserve requirements may be changed for member banks in central reserve and reserve cities, or for member banks outside these cities. Reserve requirements may also be changed for all member banks. Requirements may not be altered, however, as proposed in the House bill, for banks in one or more reserve districts and not for all districts.

³ Under the Banking Act of 1935, the vote of four, instead of five members of the Board will be sufficient to change reserve requirements.

⁴ Reserve requirements were further altered by provisions requiring reserves to be kept against government deposits, and by the grant of permission to banks to deduct "due from"

The Banking Act of 1935 permits reserve banks to make advances on member bank notes provided only that such notes must be secured to the satisfaction of the federal reserve bank.¹ But, each such note must bear a rate of interest at least one half per cent in excess of the highest rate in effect at the reserve bank on the discount of eligible paper. The theory of encouraging member banks to give preference to short-term "automatically liquidating" paper is thus not completely overturned by the act. Mortgage loans, under the act, are permitted to national banks under more liberal terms than previously prevailed, but not for the maximum maturities that would have been authorized under the House bill.²

The House provision regarding the elimination of all special security for federal reserve notes was withdrawn from the bill finally enacted. Until March 3, 1937, however, federal reserve notes may be secured by government issues.³

While opinions differ as to the merits of the legislation, there seems to be general agreement that, with wise administration, certain inefficiencies in the administration of the earlier system will be removed. The success that was realized in modifying the comparatively extreme terms of the House bill should also contribute to confidence that there will always be strong opposition to schemes proposing a highly centralized system of central banking administration, even though such schemes seem necessary to permit the application of temporarily popular formulae of credit control. The legislative history of the act also indicates that concerted objection can be counted upon against schemes to effect the complete subordination of the reserve banks to the Treasury.

5. THE TEMPORARY PLAN FOR THE INSURANCE OF BANK DEPOSITS

It has been pointed out in previous pages⁴ that the Banking Act of 1933 provided for a temporary, as well as a permanent, plan of deposit insurance. Under the initial temporary plan, insurance was limited to a maximum of \$2500 for any one depositor. The members of the temporary plan were all the member banks of the federal reserve system licensed by the date at which the plan became effective, i.e., January 1, 1934; and,

items from gross demand deposits instead of solely from "due to" accounts. This latter provision was welcome to country banks since they constitute the class of banks that ordinarily hold an excess of "due from" over "due to" items, for which excess they could previously secure no credit. These provisions are contained in Title III of the act. Cf. pp. 781.

¹ Under rules and regulations to be issued by the Board of Governors.

² Maturities of real estate mortgage loans may not exceed five years unless there is compliance with specified amortization arrangements.

³ A proclamation of the President, signed February 14, 1935, was necessary to prevent the termination of this provision of the Glass-Steagall Act of 1932 on March 3, 1935.

⁴ Cf. pp. 715-25.

in addition, such non-member banks as were approved by state supervisory authorities after certification and approval by the Federal Deposit Insurance Corporation.

The period of operation of the temporary plan was at first fixed to expire July 1, 1934, at which time it was intended that the permanent plan would become effective. Under the permanent plan there would be a 100 per cent guaranty of all accounts not exceeding \$10,000; and deposits in excess of this sum would be insured on a scale-down basis. For the time being non-member banks could be admitted to this permanent plan by securing a certification of solvency from their respective supervisory authorities and by meeting the examination requirements of the Corporation. After July 1, 1936, however, non-member banks would be obliged to qualify for membership in the federal reserve system or retire from the insurance fund.

Attention has also been called in earlier chapters to the opposition that developed to putting the permanent plan into operation on July 1, 1934. On account of this opposition, as well as for other reasons, the temporary plan was continued until July 1, 1935 (under conditions whereby the maximum amount of a single deposit insured was increased to \$5000) by the Bank Deposit Insurance Act of June 16, 1934. It was assumed by the framers of this legislation that, before July 1, 1935, there would be ample opportunity for a thorough and more leisurely reconsideration of the whole problem. Inasmuch, however, as deposit insurance provisions came to be Title I of the Banking Act of 1935, and since controversy over Title II prevented enactment of the bill by the aforementioned date, July 1, 1935, it became necessary again to put forward the date of termination of the revised temporary plan. Thus it came about that on June 28, 1935, the President signed a resolution extending the period of operation of the temporary plan until August 31, 1935. After this date, the provisions of Title I of the Banking Act of 1935 became effective.

6. TITLE I OF THE BANKING ACT OF 1935: PROVISIONS RELATING TO THE INSURANCE OF BANK DEPOSITS

Under this legislation, all members of the Federal Reserve System must belong to the Federal Deposit Insurance Corporation. For the time being, however, the benefits of the insurance provisions are made available also to all qualified non-member banks. But after July 1, 1942, state non-member banks with average deposits¹ exceeding \$1,000,000 are to be deprived of their insurance status. In other words, banks of this size must secure admission to the Federal Reserve System or lose the benefits

¹ For the calendar year of 1941 or any succeeding calendar year.

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of federal insurance. In the same manner as before the passage of the Act of 1935, the maximum insurance for any one depositor is \$5000. The semi-annual assessment rate imposed upon each bank is to be one twenty-fourth of one per cent. After 1936 the assessment base will be the daily average of such deposits for the six months period ending on the preceding June 30, or December 31.

The act contains a number of provisions increasing, or extending, the supervisory powers of the Federal Deposit Insurance Corporation. It is required of the Board of Directors of the Insurance Corporation that the following factors be considered before a non-member state bank is given insurance status:

- (1) the financial history and condition of the bank;
- (2) the adequacy of its capital structure;
- (3) its future earnings prospects;
- (4) the general character of its management;
- (5) the convenience and needs of the community to be served by the bank;
- (6) the consistency of the bank's corporate powers with the deposit insurance provisions.¹

The Board of Directors of the Federal Insurance Corporation is also empowered to terminate the insured status of any bank which pursues unsafe or unsound practices, or whose directors or trustees permit the bank's officers to violate any law or regulation to which the institution insured is subject.² Examiners of the Insurance Corporation are given complete examination powers with respect to national banks, when the Comptroller of the Currency so consents; and similar powers with respect to member state banks, if the Board of Governors of the Federal Reserve System consents.

7. THE SIGNIFICANCE OF THE ENACTMENT OF THE PERMANENT DEPOSIT INSURANCE PLAN

It is probably correct to state that most economists, many of whom favored temporary deposit insurance during the emergency of 1933, have envisaged the above-described developments with the greatest of apprehension. The basic idea of permanent deposit insurance has generally been regarded by economists as wrong. Most of them customarily argue

¹ The act requires the Comptroller of the Currency to apply the same tests to national banks and the Board of Governors of the Federal Reserve System to subject to such tests non-insured state banks seeking membership in the Federal Reserve System.

² Termination of the insured status of a national bank requires that the Comptroller of the Currency shall appoint a receiver for the bank. The loss of insured status by a state member bank requires that the Board of Governors of the Federal Reserve System terminate its membership in the Federal Reserve System.

that the insurance of deposits, by removing depositors' fears, must sometime, although perhaps not in the near future, overcome the restraints which government supervision is now imposing against unsound practices. There are many practices that regulation cannot control, and constant fears have been expressed that, as time elapses, the necessity for vigorous supervision will seem to disappear. If a general breakdown should occur in the near future, the resources of the Insurance Corporation would be thoroughly inadequate and deficits would have to be made good out of the United States Treasury. Treasury funds, however, obtained in normal ways, would probably prove insufficient to meet requirements. The final fruit of the insurance system may therefore come to be, so it is alleged, the issuance of printing-press money.

Whether such fears are to be confirmed only the future can reveal. From the standpoint of temporary developments, however, there are certain respects in which the influence of the deposit insurance system may prove to be of quite a different character. Deposit insurance made it inevitable that vigorous *qualitative* standards of credit granting should be insisted upon¹ during the stormy years of 1933 to 1935, when so many dangerous inflationary expedients were being attempted, and when banks were subjected to so much pressure to get more credit into use, through almost any available channel. Attempts to defeat depression by forcing an expansion in the outstanding volume of bank credit might then have easily led to the destruction of recognized standards in the making of loans and investments, had it not been for the added pressure to maintain such standards which emanated from recognition by the regulatory authorities of the historically demonstrated dangers of deposit insurance. It may be that eventually the existence of tremendously large excess reserves² will result in an explosive inflation, no matter how strictly standards are enforced. Meanwhile, however, deposit insurance — with its necessary complement of rigid insistence upon the maintenance of sound loan and investment practices — has held the fort against many wild inflation onslaughts.

Deposit insurance also may operate to contribute strength to the — still not very articulate — demand for a simplification of the country's regulatory and supervisory system. There is at present much overlapping of regulatory authorities. A single bank may now be affected by the

¹ In the opinion of the writer examination was generally too harsh during the trough of the depression. It is also the writer's opinion that unnecessary liquidation in many localities is still being occasioned by oversevere examination. Banks and their clients are being made to suffer the consequences of previous lax examinations.

² Cf. pp. 782-784.

decisions of the state banking authorities,¹ the Reconstruction Finance Corporation,² the local federal reserve bank, the Board of Governors of the Federal Reserve System, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation. Such overlapping of authority is not only objectionable, on the ground of the wasted time, expense, and effort imposed upon bank officers and bank directorates, but it obstructs the promulgation of a common monetary or credit policy.

There has thus far been little unanimity of opinion with respect to the most desirable method of effecting such simplification of our supervisory system. The Comptroller's office has inevitably been inclined to work for the extension of the national system. Officials of this office have from time to time made suggestions which would require the federal chartering of all commercial banks — thus leaving to the states the incorporation only of savings institutions and trust companies. The Federal Deposit Insurance Corporation, on the other hand, seems to envisage a set-up in which its authority would prevail over non-member banks while the federal reserve banks would be dominant in the regulation of member institutions. In line with this thought is the suggestion which has been advanced to state banking departments that the F.D.I.C. take over the major part of their work of examining non-member state institutions.

In all this discussion of simplification it seems somewhat strange that the old proposal to abolish the National Banking system is seldom repeated. The chartering of banks could well be left to the states; and, in so far as banks are required to adapt their policies to supposedly national requirements, there would seem to be ample regulatory power in the federal reserve banks, as far as member banks are concerned, and, in the Federal Reserve Deposit Insurance Corporation with respect to non-members of the Federal Reserve System. Under such a set-up state governments could impose upon local institutions whatever controls are desired that are not in conflict with the regulations of the two bodies charged with the promulgation of national policies, i.e. the reserve banks and the F.D.I.C.³ In other words some deference could be paid to the principle of permitting state governments to take account of local conditions; at the same time, uniformities in practices could be required in so far as considerations of national policy are concerned.

¹ In certain respects state authority controls even national bank practices. A recent case in point has been the fixing by the New York State Bank Board of a 2 per cent maximum interest rate on time deposits.

² Particularly if it has borrowed or sold its preferred stock, capital notes or debentures to the R F C.

³ In so far as such regulations represent the exercise of constitutional powers.

8. TITLE III OF THE BANKING ACT OF 1935

The portion of the Banking Act of 1935 which has not yet been discussed — Title III — is largely technical in character. Furthermore, many of its provisions have the single purpose of increasing the workability of recently enacted statutes and, in particular, of many of the stipulations of the Banking Act of 1933. Title III was therefore drafted chiefly by the Comptroller of the Currency and the Federal Reserve Board. Because of these facts our exposition will be confined for the most part to a statement of some of the more important subjects with which this Title deals.

Title III contains provisions regarding national banks' powers to buy and sell securities and to acquire the issues of one obligor; regarding the interlocking of bank directors, officers and employees with other banks and security organizations; regarding member bank loans to executive officers; regarding the affiliate relationships of national and member banks. The student will recall that these matters were dealt with under the Banking Act of 1933.

Title III of the Act of 1935 also outlines conditions under which the "double" liability of shareholders of national banks for stock issued prior to June 17, 1933, may be terminated. The Act of 1933¹ removed double liability for shares issued after June 17, 1933; the Act of 1935 deals with old shares. The Banking Act of 1935 thus gives further recognition to the fact that the principle of double liability had neither operated equitably between shareholders nor had been capable of such enforcement as to guarantee depositors and creditors any real protection against losses resulting from failure. The framers of this provision also took into account the fact that the insurance system — as well as a provision of Title III relative to the building up of surplus accounts — provides the depositor with a protection that was lacking in the days when the double liability provision was inserted in the law.

As previously indicated Title III² provides, in the computation of member bank reserves, that "due from" items may be deducted from gross demand deposits, instead of solely from "due to" items. Title III, moreover, requires reserves to be maintained against government deposits.

Title III also contains provision regarding methods of voting the stock of national banks, regarding the rights of holders of preferred stock, and regarding the determination of the extent to which the capital of member banks may be impaired.

¹ Section 22.

² See page 775, footnote 4.

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9. THE PROBLEMS OF EXCESS RESERVES AT THE CLOSE OF 1935

During the closing months of 1935 the mounting volume of member banks' excess reserves aroused the greatest interest in financial circles and occasioned many misapprehensions regarding our ability to control them so as to avoid an explosive type of credit inflation. It is the reserve of a bank that determines the extent to which it can provide, through loans or investments, the deposit credits the public uses as its principal media of payment. A complete use of existing reserves would tend to result in such an expansion in the means of payment as to threaten a serious upheaval in prices. These excess reserves were interesting, moreover, in that they represented a rather new development in the history of the Federal Reserve System. Ordinarily, as has been pointed out above in various other connections, banks loan or invest up to the maximum extent permitted by their reserves; and depend upon sales of assets, upon calling loans, or upon discounting with their reserve bank, to replenish deficient reserves. It is therefore roughly true to state that from the organization of the reserve system until 1932 large excess reserves were rare phenomena.

The following figures indicate the extent to which, since 1932, excess reserves have grown.

MEMBER BANK EXCESS RESERVES, 1932-35¹

Period	Amount in millions	Period	Amount in millions
January, 1932	\$ 35	June, 1934	\$1685
June, 1932	234	December, 1934	1748
December, 1932	525	June, 1935	2437
June, 1933	363	November, 1935	3061
December, 1933	765		

Since about the middle of August, 1935, excess reserves have more than equalled the volume of required reserves.

The causes of these swollen reserves have been varied. After the passage of the Glass-Steagall Act of February 24, 1932² the principal factor was the extensive increase in reserve bank purchases of government securities. At other times, expenditures of the Government resulted in the release of funds from Treasury balances at the reserve banks and in their eventual distribution among the country's banks. On still other occasions gold imports increased reserves since member banks' reserve accounts are credited when the gold is turned over to the United States Treasury. The rapid increase in this country's gold holdings which began in early September, 1935, partly because of apprehensions abroad

¹ Monthly averages of daily figures.

² Discussed on pp. 574-680.

of a general armed conflict, have thus had the result in the last few months of accentuating sharply the volume of member banks' excess reserves.

Opinions differ as to the probable future volume of such excess reserves. A restoration of confidence in the ability of Europe to avoid a martial combat would probably result in a return of some of our recently imported gold to Europe and would thus bring about a reduction in the size of these balances. But no matter what prediction they make of the future volume of these reserve balances, the majority of sane thinkers are agreed that the Federal Reserve Administration must be prepared to act with unusual vigor and promptness the moment inflation threatens to get out of hand.

Optimism regarding our ability to control these reserves, however, is not easily generated by a consideration of the remedies which may be invoked. Increasing the discount rates of the reserve banks, the traditional weapon of central banks, cannot be expected to produce any measurable result in a period in which the total volume of bills discounted by the reserve banks amounts — as it did on September 30, 1935 — to less than \$10,000,000.

The Banking Act of 1935 gives the new Board of Governors of the Federal Reserve System, by a vote of only four of its members, power to increase reserve requirements — up to a limit of twice the existing ratios — but it is extremely doubtful whether any such remedy will ever be invoked with vigor and timeliness. Although reserve ratios may be increased for the separate classes of member banks, difficulties will always arise because of the varying conditions of banks in the classification affected. No matter what the needs of the general situation, banks in some localities will be subjected to greater hardship in meeting increased reserve requirements than other banks, and these hard-pressed institutions can be expected to exert pressure against any increase.

On September 30, 1935, the reserve banks possessed more than 2.4 billions of dollars of government securities. The sale of these securities would eliminate a major portion of member banks' excess reserves. Such sales, however, might depress the market for government securities and therefore create embarrassment for the Treasury in marketing the new issues which future spending will require. Further apprehension regarding the effects of such sales is occasioned by the fact that, as of June 29, 1935, member banks alone held more than eleven billion dollars of either the direct or the guaranteed obligations of the United States Government. To depress the market for governments would both reduce the value of member bank assets and lessen the willingness of member banks to subscribe to new Treasury offerings.

Fears of the adverse market consequences of a refusal by the reserve banks to continue with present holdings of governments have been over-emphasized. The larger part of the reserve banks' portfolio of governments — upwards of 90 per cent — are not in bonds but in shorter-term issues; and these short-term issues, if allowed to run off, could probably be refloated with member banks at only a slight increase in rates. The effect of such action would probably be salutary in that there would be less apprehension on the part of the banking public regarding the possibilities of an explosive type of credit inflation. It is quite probable, in other words, that the removal of the specter of inflation would do more to strengthen the market for long-term governments than putting pressure upon member banks to increase their holdings of short-term issues would operate to depress the market for the long maturities.

Still other controls can be employed. Margin requirements on collateral loans may be increased; the various restrictions of the Banking Act of 1933 may be invoked with reference to the use of bank credit in the speculative markets; member banks may be called upon to increase their stock holdings in the reserve banks; the greenbacks may be retired; and member banks' loan policies subjected to more rigorous scrutiny by regulatory officials. The success of any of these devices must be predicated, however, on the assumption that the federal government will shortly make progress toward the ultimate balancing of its budget.

10. THE UNIQUE CHARACTER OF THIS COUNTRY'S GOLD POLICY IN 1933-34

Those economists who, in early 1933, advocated independent action by this country to effect a reduction in the gold content of our dollar may be classified in three groups. In the first group were those who believed that, as a consequence of various foreign currency devaluations, the dollar had risen so greatly in the foreign exchange markets as to subject our exporters to an unfair handicap. A second group did not believe that the dollar was too high in the foreign exchanges but felt that if its gold content were lowered commodity prices in this country would rise and the purchasing power of the dollar would fall with sufficient rapidity to justify a dollar of lower gold content. The third group did not emphasize the foreign exchange aspects of the problem. Its members simply contended that the world's physical supply of monetary gold had not been increasing sufficiently to prevent a deflation of prices in the gold standard world from the levels reached during and after the Great War, a period in which the world's "demand" for gold, so it was argued, had been abnormally reduced.

EVENTS SINCE PASSAGE OF GOLD RESERVE ACT 785

It is probable that the latter group of devaluationists had the greatest influence with the Administration in 1933. With respect to sterling at least, the evidence is that prior to England's departure from the gold standard in 1931 the dollar was already heavily undervalued. Few authorities argued that, after this date, internal price changes in the two countries had been sufficient to require anything like a forty per cent devaluation of the dollar to bring it into equilibrium with the pound. The gold purchase policy of the summer and fall of 1933, a policy which finally culminated in the Gold Reserve Act of 1934, represented, therefore, a unique monetary strategy. Our objective was not to relieve exchange pressure against a heavily overvalued currency. The purpose, on the contrary, was to devalue deliberately the money of the world's leading gold-holding country in the hope that the disturbances created by this action would be beneficial, at least to us.

11. IMPORTANT EVENTS SINCE THE PASSAGE OF THE GOLD RESERVE ACT

Devaluation by the United States at such a juncture necessarily carried the danger that other nations might be forced, or otherwise induced, to engage in further devaluations. Such nations might also strive to protect their trade balances by erecting higher tariff walls, by restricting the supply of foreign exchange which would be made available to their importers, or by resorting to various arbitrary methods of reducing purchases from nations with relatively depreciated currencies. On the other hand, however, there was the possibility that prices and costs in the United States would speedily adjust themselves to the new conditions.

What, then, has occurred since the enactment of our Gold Reserve Act of January 31, 1934? Let us turn our attention first to currency devaluations in other countries.

Since the Gold Reserve Act of January 31, 1934, the following nations have engaged in devaluation measures: Czecho-Slovakia, Austria, Cuba, Chile, Switzerland (for tourists' francs), Luxembourg, the free city of Danzig, Belgium, Uruguay, and Argentina.¹ Formidable as this list is, it

¹ On June 6, 1935, the Canadian Government decided to revalue 40 per cent of the gold taken from the chartered banks and to employ this revalued gold as a reserve against foreign accounts. In July, 1935, the Rumanian Government ordered domestic banks to pay a 30 per cent premium on foreign drafts. This action constituted practical, even though not official, devaluation. In November, 1935, the Bank of Italy was purchasing gold from Italian citizens at a price of 15 50 lire per gramme. Since the previous price of gold was 12.63 lire per gramme, the lire has thus been unofficially devalued by 23 per cent. It must be noted, however, that the Bank is under no obligation to buy unlimited quantities of gold at the new price. The above illustrations indicate the difficulty of making up a complete list of recent currency devaluations.

is not sufficiently extensive in and of itself to have brought about any marked improvement in the general exchange situation. Let us therefore turn our attention next to price-level changes in the different countries.

Here we find also a certain degree of change from the early 1934 situation. The index numbers of wholesale prices published monthly in the *Federal Reserve Bulletin* show, for the period January, 1934, to August, 1935, a $12\frac{1}{2}$ per cent rise for the United States, a 1 per cent rise for Canada, a 1 per cent decline for England, an 18 per cent fall for France, a 6 per cent advance for Germany, a 17 per cent rise for Italy, and a 4 per cent increase for Japan. The rise in the United States has certainly helped a little to offset the influence of our 40 per cent revaluation; and the 18 per cent fall in France¹ has operated to make the position of the overvalued franc a little stronger than it otherwise would be. On the whole, however, internal price adjustments have done relatively little to bring the world's currencies into an alignment that corresponds more closely to their arbitrarily determined gold values.

Special measures to stimulate exports and to discourage imports have also found extensive employment in various countries. Bounties and subsidies to exporters, increased tariffs, import prohibitions, and governmental control of foreign exchange required by importers have been relied upon — to give a few illustrations — by Germany, Brazil,¹ Italy, Hungary, Roumania, Jugo-Slavia and Bulgaria.

Despite these adjustments, however, recent gold movements have tended to become more capricious and disturbing than ever. Few authorities regard the existing valuations as capable of solidification in an enduring monetary system. At the time of writing it is not difficult to find ardent supporters of our gold revaluation who lament bitterly the increased volume of the money metal which is being dispatched to our shores. Even after this country practically forced China to nationalize its silver stock,² many advocates of our revaluation defended our silver purchases on the sole theory that, by supplying foreign silver sellers with dollar credits, this country was lessening the tendency for gold to move toward the United States.³ At the present time the United States holds a larger portion of the world's monetary gold than at any previous period.

¹ Quite extraordinary action was announced by the Laval ministry in July, 1935, to reduce prices and costs in France. Wages and pensions paid by the state were severely reduced, renters on lease were authorized to reduce payments 10 per cent, and provision was made for the reduction of interest on mortgages as well as on French *rentes*.

² In November, 1935.

³ A cessation of the Treasury's purchases of silver from abroad would impose new pressure on foreign gold stocks. It is not at all unlikely that our present silver purchase policy will shortly be modified.

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12. WHY RECENT REVALUATIONS HAVE NOT BEEN MORE NUMEROUS: DEVELOPMENTS THAT OBTIATED OR POSTPONED A GENERAL RACE TO DEPRECIATE THE GOLD CONTENTS OF CURRENCIES

Why is it, then, that thus far even more revaluations have not taken place since our Gold Reserve Act? Mention must in the first place be made of the formation, after the practical failure of the London Economic Conference, of a coalition of countries to co-operate in the preservation of their existing gold parities. France, Belgium, Italy, and Poland had tasted the bitter fruits of war inflation and were resolute to employ other measures to protect their currencies. Two other countries, Holland and Switzerland, non-participants in the Great War and whose currencies still stood at their pre-war gold parities, added their strength to this group. Pressure on these countries to protect their gold and foreign exchange holdings has since been severe indeed and has already led to the defection of Belgium. France's and Italy's losses of gold and exchange have been tremendous in the last half of 1935. It was largely the resistance of the gold-bloc countries, nevertheless, that erected a stern barrier to general devaluation during 1934-35.

Of perhaps even more weight, however, in obviating a general resort to further devaluation was the development of so-called sterling-area. This term is used to refer, not to a formally organized coalition of nations, but to those countries which, for various reasons, have found it desirable to work their currencies toward closer alignment with sterling. The development of sterling-area begins with the date of England's lapse from the gold standard in September, 1931, a time at which a number of other countries found it undesirable to cut their currencies loose from the pound. Since then, still other countries have decided to tie up with sterling so that, at the present time, the following are usually included among the members of the group: The United Kingdom, Argentina, Australia, Bolivia, Brazil, Denmark, Egypt, Estonia, Finland, India, the Irish Free State, Japan, Norway, New Zealand, Paraguay, Portugal, Siam, Straits Settlements, Sweden, Union of South Africa, and the Crown Colonies. At the current writing there are many qualified observers who predict that China, for all practical purposes driven off the silver standard, will endeavor to stabilize its currency with either the yen or the pound.

Within this area certain exchange adjustments have taken place which have lifted the sterling value of some of the currencies, and lowered that of others. In a general way, however, the currencies of the members of this group have advanced in terms of the dollar. Thus the \$3.30 sterling rate of the first part of 1933 had risen to around \$4.90 in November, 1935, an increase of almost fifty per cent.

Why has this depreciation of the dollar in terms of the British pound not produced such benefits for the American export trade, and such handicaps to the countries of sterling area, as to necessitate further devaluations by the members of the sterling bloc? Such a development, which would have threatened a mad depreciation struggle, was indeed a reasonable expectation after our virtual refusal to discuss stabilization at London in June, 1933. What has obviated, or at least postponed, this competitive race to devalue?

A number of factors must be mentioned in the search for an answer to this question. One of somewhat limited significance is that at \$3.30 the pound of 1932-33 was undoubtedly somewhat undervalued, probably for bargaining purposes, at the forthcoming London Conference. Of greater significance, however, in obviating a depreciation contest is the fact that a sufficient degree of exchange certainty has been realized within sterling-area to lessen the need of a fair alignment with the dollar. Within this area of comparatively stable exchanges, an area including one third of the world's population and responsible for about the same fraction of the total value of all inter-nation commerce, satisfactory trade gains have been experienced. Whether these gains are to be attributed to the relative freedom from exchange wars within this area, or to the tendency of nations with a common monetary policy to unite more readily in projects to promote acts of trade reciprocity, or to still other factors, cannot here be argued. But with respect to one conclusion there can be no fair dispute. It has fallen to other countries than the United States to interpose the only effective obstacles that have thus far been erected in the way of a ruinous international currency war.

From another point of view also, the disturbing influence of the American type of gold revaluation is to be envisaged. Our action has imposed such exchange rate pressure on the countries of the gold bloc as to accentuate deflationary price movements in this area.¹ In other words, our policy has contributed to an increased value of gold. Present demands for a further devaluation of the dollar can therefore be made on the ground that such action is necessary to offset the effects of our first devaluation. Thus far, however, the European world has generally preferred to suffer the effects of adverse exchange discrimination than to provide the inflationists of the United States with excuse for demanding another reduction in the dollar's gold content.

¹ By way of illustration, traveling in gold-bloc countries by American tourists has been rendered more expensive. Foreign gold currencies also go further in buying American securities.

13. THE PRESENT POSITION OF STERLING-AREA

Comforting, however, as have been the achievements of its members, sterling-area still leaves much to be desired in the direction of international currency stability. Situated as it is, with the overvalued gold-bloc currencies on the one hand, and the undervalued American dollar on the other, it is impossible for it to effect a closer union with one of these groups without tending to break further away from the other. As long as the currencies of the United States and of the remaining members of the gold bloc remain so far removed from correct alignment, the benefits of stabilization must be confined largely to the members of sterling-area itself. Even within the group some dissatisfaction is felt with respect to the industries that are represented, and there are sincere yearnings to widen the membership. Sterling-area seems receptive, in other words, to the contention that the field of stabilization must, at an appropriate time, be made broader; and British financial authorities generally indicate their preference for a return to a common monetary system — presumably one based on gold. But despite the admitted shortcomings of existing arrangements, well-merited satisfaction is expressed with respect to the solid accomplishments of sterling-area in a period which might easily have developed into complete monetary chaos.

14. THE FUTURE OF THE GOLD STANDARD

The above-stated interpretation of the significance of sterling-area is not intended to be a confident prediction that the gold standard, as it operated before the Great War, will shortly be reaccepted by the leading nations of the world. As indicated above, the future may witness important defections from the sterling group with resulting monetary confusion. Under the pent-up pressure of prolonged deflation France and other members of the gold bloc may also be led to undertake such a reduction in the gold values of their currencies as to initiate a movement for still greater devaluations in both the United States and sterling-area. The present situation is indeed precarious. All that can now be asserted is that the prospects of realizing ultimately a better alignment of the important currencies of the world are stronger than it was reasonable to expect at the time the United States insisted upon proceeding with independent measures in 1933.

The readjustment of the gold values of important currencies at reasonably accurate levels, if accomplished, will not solve, however, the whole of the problem of stabilization.¹ After agreeing upon the terms of stabil-

¹ The writer is not one of those who feel that final fixation of the gold values of the pound and the dollar should be attempted amid the confusion that now prevails. In the face of

ization, nations must prosecute policies calculated to keep the goods values of their currency units in reasonable relationship with the gold values of these currencies.

Can this once more be done? In the minds of many monetary economists such a solution ought not even to be attempted. It is frequently argued that the internal monetary requirements of the different nations have become so divergent as to require abandonment of all projects to maintain external stability. Some nations, it is contended, require a stable money (one which changes little from time to time in purchasing power). Others, it is maintained, would fare better by observing the precepts of neutral money (in which price levels vary only in response to such "goods" factors as climatic conditions, technical changes in manufacturing, etc.). Since there are claimed to be such discrepancies in the needs of different nations it is held that efforts to affix different currencies to a common commodity should be abandoned; that each nation should go its own way with inconvertible paper money; and that no attempt should be made to stabilize the value of one currency in terms of others.

What the final attitude of different peoples will be toward this contention cannot be stated with confidence. It is the belief of the writer, however, that the world is tired of independent currency policies by the different nations and is anxious to avoid them in the future. It is also his opinion that the sacrifices required of a nation to stay on a common monetary system have been grossly exaggerated. The preservation of the gold standard has compelled many nations to adopt unwelcome monetary policies. Study in retrospect, however, usually reveals that the restrictions thus imposed would have been necessary anyway, at a shortly later date, to avoid the development of unsound economic conditions. Monetary science is more and more tending to teach that periods of expansion sooner or later create maladjustments of a type that are not always promptly revealed in such statistical indices as prices, employment, and the volume of speculation. Adherence to a metallic standard in such a situation causes nations to make adjustments before the consequences of mistakes will be as great as if the expansion period had continued longer. We have generally indicted the gold standard, moreover, for consequences that do not properly fall at its door. Our worst sufferings have not resulted so much from prolonged adherence to restrictive currency and credit policies as to sudden and enforced retreats from expansions too rapid to be maintained.

the many recent devaluations, furthermore, such action would probably provide so broad a base for currency and credit expansion as to invite extreme price inflation. It is essential, however, that progress be made in determining that relationship of the dollar and the pound which may be reasonably expected to become the basis for a permanent stabilization pact.

The restrictions required to adhere to a common metallic standard, therefore, have probably been for the most part beneficial. What, under the gold standard, will very likely have to be feared the most in the future will not be the restrictions this system requires, but the expansiveness it may permit. Sometime the world may reap the full consequences of recent devaluations. It is partly for this reason that the writer does not advocate permanent stabilization now. But, if the gold standard, if re-established, cannot be managed¹ so as to avoid the full influence of these devaluations, we would stand little chance of succeeding with controlled systems of paper money. Under the worst conditions of expansion the gold standard does at least tend to impose restraints upon the particular nations whose pace of expansion is the fastest.

Space does not permit us to engage in discussion of the improvements that as a result of recent experience may be effected in the future in the management of gold standard systems. But recent experience should have demonstrated that a common monetary system should extend over wider areas than those comprising single nations. As a matter of fact, the typical argument for a complete independence of countries in the choice of monetary systems and monetary policies would also support proposals to divide any large nation into a number of areas of complete monetary autonomy. Few contend, however, that it would be desirable to split up our nation, for instance, into numerous currency districts so that each district could gain the advantages of a depreciation struggle with each of the other districts.

The problem of securing co-operative action in the field of money is of the greatest importance in the maintenance of international good will. In no direction have nations made greater strides in the achievement of mutual accord than in evolving a common monetary system. A final and complete destruction of this accord would contribute heavily to the obliteration of all effective economic co-operation between the nations of the world.

¹ Proper management may require the banking authorities of the United States to act in concert with those of Britain with respect to credit policies.

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